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ABSTRACT

The study assessed the perceptions of 84 educable mentally retarded (EMR) junior high school students (black and white from lower and middle class socioeconomic status) regarding the nonverbal communicative behaviors of teachers. The C. M. Galloway Categories of Teachers' Nonverbal Behaviors were employed to determine how racial characteristics and socioeconomic class status might affect person perceptions. Data indicated that EMR Ss with higher social inferential skills did not view inhibiting (inattentive, unresponsive and disapproving) teacher behaviors any differently than did Ss with lower inferential skills. It was found that race was statistically significant to one dependent variable, enthusiastic support. Black Ss scored higher toward the black teacher-actor while white Ss scored higher on the white teacher-actor's performance. Lower class black and white Ss gave a higher score to the black teacher-actor within the helping category, while middle class black and white Ss rated the white teacher-actor higher. Lower class status blacks were found to be more tolerant to the unresponsive category than middle class blacks. The middle class black EMR Ss were most rejecting of all four groups (black-lower, white-lower, and white-middle) toward unresponsive teachers' nonverbal behavior. (GW)

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EDUCABLE MENTALLY RETARDED STUDENTS' PERCEPTIONS OF TEACHERS' NONVERBAL BEHAVIOR

By

Howard G. Ball

1972

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CHAPTER I

INTRODUCTION

The purpose of this study is to investigate the perceptual qualities of educable mentally retarded (EMR) adolescents. It is important to investigate how a teacher's nonverbal communicative behavior can affect EMR teenagers' perceptual and cognitive processes. This study could provide teachers with models of nonverbal behavior which would develop more positive and reinforcing instructional methods.

There has also been an increasing interest in the psychology of and education toward the modification of learners' behavior by means of a system of reinforcing desirable and successful behavior. Pursuing this trend, we see implications, of this study, for answering the following questions:

A. How can teachers' nonverbal behavior provide congruency for the total communicative process?

B. What effects, if any, does the nonverbal behavior have upon the social and emotional climate of the classroom?

C. What effects do preconceived values, attitudes, and

mores of EMR adolescents have upon their perception of teachers' nonverbal behavior?

D. Do EMR youngsters perceive teachers' nonverbal behavior differently according to the youngsters' socioeconomic and cultural backgrounds?

It is believed that the results of this study would not only throw light upon the nature of perceptual qualities of EMR adolescents but also reveal differences among them in these qualities due to socioeconomic, cultural, and ethnic characteristics.

There were practical considerations which were taken into account in determining the demographic base for the selection of subjects and the age of the subjects included in this study. An urban locale for selection of subjects was chosen because it had sufficient white and black EMR subjects from middle and lower class status. It was important to the study that a sufficient number of EMR subjects be located within a rather well-defined geographical area.

It was necessary that the study use EMR subjects with sufficient sophistication and maturity so that they might discriminate the quality of teacher's nonverbal behavior on a three-point rating scale. It would seem reasonable to suppose that younger (under 12 chronological age) EMR subjects would not have the ability or capability to define, as clearly, the qualities of teachers' nonverbal communicative behavior as would older subjects, due to less classroom exposure and

their immaturity. This lack of perceptual acumen may be expected to be overcome as the mental age of FMR increases along with the chronological age.

The effects of mental retardation on the person-perceptions of adolescent EMR boys and girls is a goal of this investigation. It is believed the socioeconomic, cultural, and ethnic differences will have a perceptible effect on the types of behavior which the subjects will perceive as encouraging or inhibitive.

Since former president John F. Kennedy's creation of the President's Panel on Mental Retardation in 1961, there has been an intensive search for ways to improve services and programs for mentally retarded students. Recently there have been increased funding efforts, through Titles VI-B and VI-D, on the part of the federal government to encourage research and study into developing more expanded services and programs to assist the mentally retarded to develop to their fullest potential.

This study is an effort to obtain a more thorough understanding of the process of meeting the instructional needs of mentally retarded youth.

The Design of the Study

This study utilizes an experimentally designed Visual Person-Perception Test to assess EMR adolescent student perceptions of the nonverbal behavior of teachers. A three-point rating scale was

designed specifically for this study to be administered to a cross-section of EMR students within a defined geographical area.

Other variables to be considered in the study are sex, intelligence quotient (I. Q.), reading comprehension, Test of Social Inference Score (T. S. I.), socioeconomic and ethnic backgrounds, and grade level.

The design of this study plus the handling of the data and the statistical treatment, were done with the assistance of the Educational Development Systems, Inc., Columbus, Ohio.

All the data were analyzed by an IBM 370/165 computer. Two "canned" programs, the University of Miami's Multivariate Analysis of Variance,and Omnitab, were used for the processing of data.

Hypotheses of the Study

1. The method by which the subjects will be grouped in order to view the Visual Person-Perceptual Test will affect the subjects' responses.

2. There will be closer correlation on the subjects' ratings between the Test of Social Inference and the Visual Person-Perceptual Test than among any other ten combinations of covariates (age, I. Q., reading comprehension, and sex of subjects).

3. EMR subjects are more accepting of physical contact from teachers with the same ethnic background than from teachers with different ethnic backgrounds.

4. The age of the subjects will have a direct relationship to the subjects' perceptual rating of the Visual Person-Perceptual Test incidents.

5. The proforma (neutral) nonverbal behavior of teachers will be perceived by EMR subjects as neither inhibiting nor encouraging.

6. Subjects' scores on the Visual Person-Perception Test will reflect more favorable responses toward encouraging communicating behaviors (enthusiastic support, helping, and receptivity) rather than toward inhibiting communicating behaviors (inattentive, unresponsive, and disapproval).

7. As the reported I. Q. levels of the subjects increase, there will be increased perception of the nonverbal teacher behavior portrayed in the Visual Person-Perceptual Test incidents.

Statement of the Problem

This study deals with the question of how the educable mentally retarded (EMR) child perceives the nonverbal communicative behavior of the classroom teacher and how this perception held by EMR children toward their teachers might be assessed.

One problem in investigating the perceptions of EMR adolescent youth is their limitations in analyzing, ordering, and sequencing of qualitative information. Studies have been done which have focused

upon attitudes, values, and perceptions of EMR subjects (Guskin, 1963, 1963b; Clark, 1964; Yarrow, 1960; Spradlin, 1963). Although these studies were well designed and systematically developed, the instruments used for eliciting responses were composed of abstract signs and symbols (words and static pictures). These instruments lacked a concreteness . . . a reality which more closely correlated with the everyday experiences of the subjects.

This study focuses upon the following questions:

A. What traits or experiences affect EMR views of teacher nonverbal behavior?

B. What teacher nonverbal behaviors are responded to most favorably (or least favorably) by EMR youth?

C. What behavior variables are more reinforcing . . . most inhibitive?

It is evident that all teachers do not share the same verbal and nonverbal communicative skills. It is reasonable to assume that inconsistencies between verbal and nonverbal communicative behavior vary not only among teachers but also in the meanings and feeling states represented in the responses of students.

Importance of Or Rationale of Study

The present study attempts to determine, in the case of junior high school teachers of educable mentally retarded students, if

a relationship does exist relative to a teacher's nonverbal behavior and the effects these behaviors might have upon the instructional message. It also attempts to discover the extent such relationships differ in varying socioeconomic and ethnic school settings. It is the purpose of this study to quantify the perceptual differentia of EMR subjects as to these contextual referents.

For the past forty years, educators have been concerned with the social climate of the classroom. Many of empirical studies have been related to this phenomenon. For example, Flanders (1960s) summated much of the existing research on the emotional climate of the classroom and subsequently separated teacher behavior into three generic categories which he labeled "integrative," "gives information," and "dominative." The "integrative" pattern of teacher behavior encourages students' participative and initiative behavior while the "dominative" pattern restricts and limits student behavior contingent on the commands of the teacher.

Galloway (1970), concerned with the social climate in the classroom, developed a continuum conceptualizing rather discrete categories of teacher nonverbal behavior. Like Flanders, Galloway related his categories to the interactive relationships between teacher and students. Galloway established three broad categories as "encouraging," "pro forma" (neutral), and "inhibiting" communication. The following is a synthesis of the Flanders and Galloway systems as

teachers might use their verbal and nonverbal capabilities in affecting the instructional message.

FLANDERS (verbal)	GALLOWAY (nonverbal)
Integrative Pattern	Encouraging
accepts, clarifies, supports, ideas and feelings of students; praises and encourages; stimulates pupil participation in decision making.	enthusiastic approval, warmth, emotional support, nurturent act, willing to listen, attentiveness, eye contact.
Gives Information	Pro Forma (neutral)
expresses, lectures.	neither encourages not inhibits communication.
Dominative Pattern	Inhibiting
gives directions or orders, criticizes or deprecates pupil behavior, justifies one position or authority.	unwilling or unable to be attentive; disinterested, nonresponsive, ignoring, withdrawn, negative overtones, frowning, belittling, threatening.

If we accept this comparison as sound, it becomes apparent that the teacher nonverbal behavior has interfacing implications with teacher verbal behavior. The present study is based upon that assumption.

Limitations of Study

1. This study is limited to junior high school educable mentally retarded subjects. These subjects are representative of two socioeconomic and culturally different urban districts.

2. The Galloway continuum is represented by a seven (7) categorical system which consists of enthusiastic support, helping, receptivity, proforma, inattentive, unresponsive, and disapproval.

The quantity and types of teacher nonverbal behavior are representative of seven broad areas ranging from encouraging to inhibiting behavior. These behaviors are not inclusive of all teachers' nonverbal behavior.

3. The sample size will be limited to the number of junior high school EMR students currently identified and placed within the school system where this descriptive study will take place.

4. The experimentally designed instrument's effectiveness is limited by the reproduction capabilities and limitations of its hardware and software components. The Visual Person-Perception Test is recorded on videotape. Television is of low definition. This medium requires much closure, emotional involvement, and participation on the part of viewers (subjects) to fill in the missing visual information (McLuhan, 1964).

Summary of Study

Nonverbal behavior is an integral part of the human information system. This manner of communication is receiving increased study by investigators in the field of education.

This research is predicated on these problems: How does the nonverbal behavior of classroom teachers affect the learning styles of EMR students? Do students from the lower and middle class status socio-economic cultural backgrounds view the managed and spontaneous, nonverbal teaching behaviors differently? Do the white and black racial characteristics of the teacher precondition EMR student responses to the other nonverbal behavior of the teacher?

There is emerging evidence that nonverbal behavior has a great impact on interpersonal communication. Nonverbal communication consists not only of the discrete gestures, bodily positions, paralanguage, but it represents an integral part of our message sending and receiving system. The extent to which educable mentally retarded adolescents perceive the signals, clues, and cueing signs of others, especially their teachers, is the focus of this study.

To date, research efforts and investigations aimed at defining and evaluating the person-perceptual qualities of EMR youth are meager. Even so, the few studies located and referenced revealed that EMR adolescents' perceptions are limited and underdeveloped.

It is not the purpose of this study merely to replicate past

efforts, but rather to add another dimension of research by assessing the impact of lifelike, dynamic and ongoing nonverbal messages upon EMR youngsters while at the same time evaluating the communicative qualities of teachers' nonverbal behavior. It is hoped that this study will provide significant evidence to convince teachers that they need to address themselves to the importance and effectiveness of their nonverbal behavior as it relates to the instructional message.

If this investigation validated the concept that EMR students' person-perceptions are influenced by the student's socio-economic and ethnic background, then there are important implications to be considered relating to possible modification of a teacher's nonverbal behavior.

If this investigation can differentiate the styles of teachers' nonverbal behaviors in relation to the subjects' backgrounds, then additional factors need to be developed which will influence, facilitate, and reinforce learning.

Definition of Terms

For the sake of clarity and consistency, it is necessary to define the basic terms which will be used throughout this account of the study.

Perception - The process by which a person discriminates, analyzes and organizes external stimuli.

Communication - An interdependent exchange of messages between two or more persons.

Nonverbal Communication - Transmitting a thought or feeling from one person to another through gesture, posture, facial expression, tone and quality of voice, or physical contact, as an auxiliary function to speech or without speech. (Galloway, 1962)

Kinesics - An anatomical study of a person's movements, gestures and postures which function with or without speech.

Mental Retardation - The sub-average general intellectual functioning which originated during the developmental period and is associated with impairment of adaptive behavior. (Heber, 1961)

Noise - Random stimuli which intrudes upon and reduces the clarity of the message.

Proxemics - The manner in which persons use the immediate space for direct focused communication activities.

Fidelity - The quality or state of accuracy of information.

Self-Concept - A system of beliefs which a person has about himself.

CHAPTER II

SURVEY OF LITERATURE

This chapter deals with two important areas of research relating to nonverbal behavior. The first is concerned with the functions of nonverbal behavior in the total communicative process. The second relates to the implications of nonverbal behavior upon student/teacher interaction, including, particularly, interrelationships between EMR children and teachers. The investigator reviewed the pertinent studies which seemed to relate to these areas. Specifically, the major topics of research and literature which were examined were: (1) the definitions and qualities of nonverbal behavior as they are viewed within the total communication concept; the effects and implications of social and cultural values, traits, and attitudes upon the cognitive and affective dimensions of human interaction; (2) the effects of nonverbal communication in the instructional setting, and (3) the definition, characteristics, and perceptual qualities of educable mentally retarded (EMR) children and how these affect EMR student perceptions of teacher nonverbal behavior.

The research, studies, and investigations dealing with the person-perceptions of EMR students is very limited. In order to

ascertain what investigations had been done in this area, a comprehensive review of existing research on general person-perception was essential to this study. Included also will be the available literature on EMR perceptions.

This chapter is divided into three major sections: (1) the communicative function of nonverbal behavior, (2) nonverbal behavior within the context of the classroom setting, and (3) studies of educable mentally retarded perceptual characteristics and qualities.

Nonverbal Behavior as an Aspect of Communication

Educators, psychologists, anthropologists, and sociologists are placing much emphasis on the nonverbal aspect of communication. In the past fifteen years many researchers have looked closely at nonverbal signals, signs, symbols, and cueing. Research shows that what humans do with their actions behavior may be as important as is their verbal behavior. It has been indicated that nonverbal behavior is a very significant part of the communication system of man. Galloway (1970:4) defines nonverbal communication as follows:

> Nonverbal language means communicating without words. Its very definition implies that behaviors are as significant as words. Perhaps more significant, it stresses the "how" of communication rather than the "what." It highlights the functions of attitudes and feelings and makes them an important part of language. The unintended and unwitting signs and signals we express toward others are also included.

From Darwin's The Expression of Emotions in Man and

Animals (reprinted, 1955) to the present, observers and researchers of human behavior have contributed to the foundations of nonverbal human behavior.

Darwin (1955) emphasized that man's nonverbal behavior is related to emotional and involuntary emotional states. He conceptualized that communicative gestures were universal, although some distinct cultural behaviors might occur.

Studies and investigations of human characteristics and traits have been going on for the past hundred years. Researchers have examined the cultural habits and behaviors of discrete societies and have found no overriding behaviors or gestures which transcend all cultures or provide unique and innate superiority of some groups over others.

Ekman's (1969:88) conclusions indicate an interesting viewpoint. Ekman did a study using cross cultures (New Guinea, Borneo, Brazil, Japan, and the United States). Ekman found evidence of pancultural elements in facial display. Subjects in the cultures recognized some of the same emotions when shown a standard set of facial photographs. Ekman did emphasize that most nonverbal displays were related to the teachings of the particular culture.

Bruner and Taguiri (1954:637) said:

> The best evidence available (from 30 years of research) seems to indicate that there is no invariable pattern, or at least no innate invariable pattern of nonverbal behavior, accompanying specific emotions (referents).

Ruesch and Kees (1969) viewed nonverbal symbols and gestures as not relating to a universal language of man but rather to a distinct communication system of each social and cultural group. They recognized that emotions of crying and laughing may have some cross-cultural meanings but the impact is related to the influence of the cultural context.

Nielsen (1968:65) states:

> A person who travels in a foreign country will be able to understand others from watching how they behave, although, alas, he is likely to be tricked exactly at this point because of cultural differences in the visual language.

Hall (1959:150) directing his comments to the effects of culture on behavior suggested that:

> The formal patterns in America hold that when we want to express joy we laugh, to express grief we cry. It is much easier for women to laugh and cry than men. In Japan, laughter does not always mean that a person is happy. It may mean that he is embarrassed. In Italy, crying is often used to express happiness.

Scheflen (1964:316) emphasized the importance of the cultural influences in determining the nonverbal communicating behavior of humans. He sees these behaviors as differing from culture to culture, and culture to subculture. Scheflen acknowledges that human ability to communicate is universal, but the language, verbal or nonverbal, is culturally determined. To understand gestures, paralanguage, and postures, it is necessary to observe the culture . . . the classes.

Ray Birdwhistle (1956) believes there are no universal

gestures. There is no single facial expression, movement, or body position which conveys the same meanings in all societies. He emphasizes that there are basic elements of gesture (Kines) which are cultural and often communicate subliminally. A sub-culture within a larger culture may develop its own systems of signs for particularistic communicative purposes.

Starkey Duncan (1969) extends nonverbal communication beyond the concepts of bodily gestures and kinesic behavior to additional communication areas such as paralanguage (voice qualities, speech nonfluencies, and nonlanguage sounds as laughing, yawning, and grunting); proxemics (use of personal and social space and man's perception of it); olfaction (scent, odors); haptic (skin sensitivity to touch and temperature); and use of artifacts (dress and cosmetics). Of the nonverbal modalities, body motion, gestures, paralanguage and proxemics seem to have most attention of researchers. It is interesting to note that most research in the area of nonverbal behavior seems to fall into the areas of body motion and gestures.

Cassier (1941) is more definitive. He acknowledges a sign as relatively fixed in meaning to the referent it represents. He sees the symbol of the referent (gesture) as extremely variable. The symbol has less credibility, more ambiguity than the sign. If the symbol is not understood, within the context of the culture, confusion and "noise" interferes with the fidelity of the message.

Frank's (1957:38) proposition supposes that all messages sent and received by persons evoke some psychological change which has a relative effect on the affective domain. Two-way communication may be governed so subjectively, that is, the meaning of the message may be warped or distorted by the emotional elements interpolated on the content. The quality or tone of the message may be subordinated by the tone of the voice, social or psychological distances, facial expression, proximity or the lightness or heaviness of touch.

Scheflen (1966) related nonverbal behavior and its implications in psychotherapy. He points out that some gestures and acts have the same meaning as the concurrent verbal content (congruency). He emphasizes that other nonverbal behavior betrays contrary meaning (incongruency).

Some nonverbal messages may be managed to present a particular point of feeling, tone, or viewpoint. Goffman (1959:34) asserts that nonverbal gesturing and cueing can be managed so as to communicate a desired message. He states:

> Now these embodied expressive signs can function to qualify whatever an individual may mean by a statement he makes to others and thus play a role in the focused interaction of, say, a conversational gathering. However, it is the special character of many of these events, when seen as communication, that they cannot be easily focused or shielded, tending, in the extreme, to be accessible to everyone in the situation at large. The messages do seem well designed to convey information about the actor's social attributes and about his conception of himself, of the others present, and of the setting.

Broadbent (1958) investigated nonverbal behavior as a system of communication having a syntactic and semantic linguistic style of its own. Armstrong (1961) relates nonverbal behavior to the immediate context in which the behavior takes place and the personalities of the communicants. Birdwhistle (1952) and Scheflen (1966) point to the study of kinesics or body language as spontaneous and unmanaged behavior. Much is directed toward the unconscious states of humans.

Many investigations point to nonverbal behavior as a mirror to the inner states of human feelings. These nonverbal behaviors are said often to provide more authenticity than the verbal statement.

Reik (1949:6) for example, states:

> Accompanying every process of thought; muscular twitching in face or hands and movements of the eyes speak to us as well as words. No small power of communication is contained in a glance, a person's bearing, bodily movement, a special way of breathing. Signals of subterranean motions and impulses are being sent silently to the region of everyday speech, gesture, and movement.

Koffka (1935) and Deutsch (1950) address their philosophical premise toward behavior as manifestation of an aggregate number of phenomena. Deutsch remarks that human gesturing is a combination of different psychologically determined movements of single parts. The psychodynamics of a given system will direct those numerous elements which will affect nonverbal configuration.

Although a review of research and literature on nonverbal behavior indicates a lack of effort in succinctly interfacing human verbal

and nonverbal behavior the following literature and research findings suggest an implicit relationship between the verbal and nonverbal dimensions.

Birdwhistle (1952:130) stated:

> We do not yet know exactly how the linguistic and kinesic systems fit together. All of the evidence indicates that they are inextricably related in the communication process and have priority of function only in limited contexts. Both are necessary to the communication process; and they are only heuristically separable.

Buhler (1934) historically noted that it has long been accepted that the nonverbal, gestural behavior antedates the verbal component. Such gestures may serve to substitute or reinforce human communication. One cannot be divorced from the other without decreased effectiveness.

In view of the research, there is emerging evidence that nonverbal behavior plays a large role in the communicative systems of man. Nonverbal communication does not consist of discrete forms of gestures, bodily positions, inflection and intonations, movements, etc., but rather it represents an integral part of our message sending and receiving system. The review of literature makes it clear that cultural differences are not only those unique and differing referents to behavior that are designated by boundaries between countries, states, and cities. These cultural differences are also found within a city and from one school to another school within the same district.

Nonverbal Behavior and Its Implications On The Instructional Setting

The gesturing of man preceded the aural component of language (Buhler, 1934). It is through body language . . . the nonverbal communicative behaviors that man developed the syntax and semantics of communication (Birdwhistle, 1954).

When the writer alludes to language, it is not only directed to the language of the spoken word but to the language of feelings, of the expression of the eyes and of course, gestures.

Barbara (1956:288) states that:

> It is probable that the language of words was a late formation taking the place of gestures.

Paget, (1950:76) perhaps somewhat over zealously, maintains:

> The movements of the tongue originally initiated our various actions. Even where language only serves the purpose of practical communication, we hear the accompanying sounds expressive of emotion.

Historically, language seems to have originated from the need of more specific and specialized forms of communication. The abstraction of thoughts and emotions became too refined for expression in gross motoric symbols. The evolution of the spoken word became a part of man's information system. Sir Richard Paget (1950) concludes that we can no more consider the spoken words overshadowing gestural communication than of gestures overshadowing the spoken word. Each

component has its own importance in the communicative effort of man.

Frank (1957:31) views the impact of nonverbal behavior as interactive. He implies that two bodies, in the direct focus of each other, react with each other. Nonverbal transaction is concerned with the activity of an organism which evokes messages from another, and then responds to the message in terms of the meaning for him. These are products of past experiences. Thus, the nonverbal transactional process involves a reciprocal, cyclical feedback with the participating persons. The nonverbal behaviors are then governed as much by the intended receiver as by the intent of the sender. Each gesture of the sender evokes a gesture from the receiver and so on.

Heger (1968:2) succinctly interpolates the components of verbal and nonverbal communication into the vast arena of interpersonal communication.

> The term verbal can be defined as that which consists or has to do with words, only. By contrast, nonverbal interaction is more than the gestures and mannerisms which accompany the words. Nonverbal interaction includes the intonations of delivery as well as those mannerisms which are commonly recognized as nonverbal.

The above statement summarizes the posture of this study.

This study postulates that the nonverbal dimension includes all communicative behavior that is visual plus verbal qualities, intonations and inflections of the vocal mechanism. Verbal communication is the articulation of words into messages. Therefore, the

classroom teacher's verbal behavior is significant of what is being said . . . the nonverbal is the how of its being said.

There is presently a meager amount of research on how nonverbal behaviors influence the cognitive areas. Balzer (1969) and Rosenstein (1959) made studies in this area. Rosenstein investigated behavior predictors of effectiveness by teachers. His study found significance in the way teachers' gesturing and body positions affected the intended message. Other than stating the gesture as attention getting devices, this study also showed that relevant and meaningful gestures improve the quality of the message. Balzer's report concluded that the nonverbal behaviors of biology teachers were an important means of teacher expression. Nonverbal behaviors increased the fidelity of communication and reinforced, even sometimes detracted, from the verbal message.

Stephens (1963) suggests that while verbally "giving" information, the sender is "giving off" nonverbal messages. The nonverbal component is giving off information about feelings and attitudes. Thus, when a student is attempting to "read" the teacher, the "giving off" behavior is influencing the "giving" behavior and often the "giving off" can have more significant implications than the "giving" behavior.

Galloway (1970) adopted an encouraging/inhibiting continuum for observing teachers "giving off" behavior. This has been referred to earlier and will receive greater emphasis in the next section of this study.

Silent language (nonverbal behavior) has been an important aspect of human and cultural development. In underdeveloped and illiterate cultures (i. e., Bushmen and Hottentots in southern Africa), gestures, expressions, movements, and tonal articulations are the most effective forms of exchanging information.

Children in many cultures learn to use and read silent language before they learn to speak. The young child learns to reach out, to smile, to cry, to frown. Nielsen (1968:65) addresses his investigations to this concept by saying:

> A child must learn to master the language of body movements. Walking up to, walking away from, waving, and caressing are "words" and "sentences" in silent language which the child knows and understands.

Rosenberg and Langer (1965:593) state:

> It has long been accepted that the postural-gestural expression antedates verbal-linguistic communication in ontogenesis. Such gestures may serve adjunctive or substitutive functions in contemporary communication.

Goffman (1959:97) suspects there can be different responses in human interaction. He addresses the point not only in terms of an individual's role expectation, but also how he perceives and defines the situation. This then becomes a concern for the individual differences in role expectations and perceptions. It is therefore necessary to consider the ways in which the individual manipulates his many roles.

Hough (1970) pointed out the role of a teacher cannot be summated as a single activity. In order to understand what these role

expectations of the teacher are we must note the teacher's total participation in the instructional process. The teacher works with individuals and with groups of students, lectures, demonstrates, grades papers, passes out materials, gives assignments, encourages, restricts, and so forth. It is therefore evident that the teacher acts and reacts in very specific ways and in terms of the parameters of preconceived perceptions of the teaching process.

The classroom communicative effects of verbal and nonverbal behaviors are unique to each situation. These communicative qualities are dependent upon the ableness of the interactants. Barbara (1956:288) candidly states:

> What goes on in the verbal and nonverbal, silent or unspeakable levels in relation to life facts can only be differentiated in terms of our individual reactions, orientations, evaluations, etc.

Galloway's studies (1962, 1970) show that both teachers and students continuously communicate attitudes, feelings, and values through their nonverbal behavior. He emphasized the importance of developing teacher awareness of these classroom nonverbal behaviors in order that congruency and credibility be established in the total behavioral process of teacher communication.

Pancrazio and Johnson (1971) examined stragegies for training teachers to manage or manipulate their nonverbal behaviors toward more effective states. They approached this by the use of (1) lecture-

discussions, (2) programmatic videotape, and (3) microteaching procedures. This study indicated that these approaches offered "viable alternatives" with implications that more longitudinal studies might provide more meaningful and comprehensive information for teacher training.

The nonverbal behavioral qualities of teachers are not limited to body positions, gestures, postures, facial expressions, vocal intonations, and other direct personal referents. The teacher's use of space or the concept of proxemics adds information about how people perceive each other.

Hall (1959) points out that different cultures structure space in different ways. He speaks of space concepts in terms of personal, social, and public. Hall refers to comfortable communication with white Americans as about twenty-one inches; for Latin Americans, eighteen inches; for Arabs, twelve inches. This use of space between persons is known as Proxemics.

Galloway (1970) remarks that a teacher's use of space may be reinforcing if used in a classroom where students perceive spatial distances of the teacher. If the referents for personal or social distance are different, then a student may feel rejected or threatened. "Communication is difficult among people who do not share the same cultural code," says Kochman (1970:82). He continues by stating: "People fail to communicate all the time. This involves a failure to

properly understand the message because the communicants involved failed to understand each other's code: to read accurately the cultural sign that the other was sending."

Teachers, like all other human organisms, are affected by their socioeconomic and cultural backgrounds. They have predetermined and preconceived attitudes, feelings, opinions, and behaviors. Teachers have developed styles of communicating which have been effective in adjusting to and functioning within their immediate and familiar environment. Often the placement of a teacher is not made on the basis of a careful assessment of the teacher's cultural background and communication skills. Cultural factors and communicative skills of teachers and those of the students should be a criterion for teacher placement.

Kochman (1970:84) speaks of distortions which occur where members of one culture interpret similar gestural behavior differently. The referents for meaning are different and often conflict. Kochman (1970) describes cross-cultural interference between a teacher with middle-class status and a Puerto Rican boy with lower status. He recounts how the teacher was reprimanding the child for not doing his assignment. The Puerto Rican student lowered his eyes (respect). The teacher misread this as an attempt to escape punishment. The teacher insisted that the student have eye contact with her. The teacher, angered by what was seemingly evasion by the child . . . lifted his

chin to establish eye contact. Kochman's example emphasizes that similar nonverbal behavior must be referenced within the culture that attaches meaning to these syntactually similar but semantically different nonverbal behavioral qualities.

Kochman (1970) suggests that patterns of nonverbal behavior emerge from the values and attitudes associated with such patterns and that once these are shared by other members of one's group, they become the culture of that group. Social, political, economic, and racial segregation enforce an isolation which dissipates shared behavior patterns within a large society.

It is not unusual for teachers to misinterpret the values and attitudes which give reference to a class of student behaviors and conversely, students can easily misconstrue what a teacher means, both verbally and nonverbally.

Hall (1966) reflects upon the separateness of ethnic groups in our society. He believes that subcultural groups develop their own values and mores. The nonverbal expressions relate to a separate and segregated situation. This gives distinct and different meanings to all aspects of the communicative process (verbal and nonverbal).

Ruesch and Kees (1969) identified nonverbal communication with all of the forms of communication. Through communication models they showed the receiver (student) as perceiving the information, processing it, then evaluating and ordering the information using past

experiences, making a decision, and then transmitting some overt expression back to the sender. Ruesch and Kees emphasized that this entire process may go on without the participants' (teacher and students) awareness that this affective process is going on.

Galloway (1970) says that students, especially from deprived and disadvantaged backgrounds, often observe teachers' nonverbal behavior for greater understanding of the classroom environment. The assumption is implicit that teachers should be aware of perceptions of students and exhibit congruent nonverbal behavior.

Goffman (1959) approaches this construct from the vantage point of teacher-managed behavior. Whether an individual plays a role or plays at it, we can expect that the mechanics of putting it on will typically expose him as being out of character at certain regular junctures. Thus, while a person may studiously stay in role while in the staging area of its performance, he may nonetheless break role or go out of role when he thinks that no one, or no one of importance, can see him.

Galloway's (1970) and Goffman's (1959) assumptions collectively point to the proposition that teachers must direct their input in such a meaningful manner that the conclusions reached by students are consistent with the intended outcomes. There must be congruency between the verbal and nonverbal systems. Therefore, teachers must be cautiously aware of their emotional feelings and

attitudes in order that the expressive qualities of their behavior will be consistent with and reinforcing of the teaching process.

Ekman (1964:300) in his investigations of nonverbal behavior suggests that nonverbal behavior may be communicated through specific and general classes of information. He states:

> The most obvious example of specific nonverbal communication would be a gesture such as a smile or fist shake which has direct verbal translation.

These nonverbal acts convey direct, explicit, specific information. In addition to the specific information-giving gestures, nonverbal behavior may communicate general or gross information which could be described as information about activity level, anxiety, or the accumulation and discharge of tension.

One of the earliest investigations by Gates (1927) pointed out that children found it much easier to differentiate between facial expressions than verbal expressions or body positions. Mehrabian and Ferris (1967) reinforced this forty-year theory through their research. They concluded that the facial component received two-thirds the weight received by all other communicative components.

Zaidel and Mehrabian (1969:224) more specifically define the importance of facial expressions over the verbal channel:

> In both the facial and vocal channels, communications of negative attitudes are more effective than those of positive. In other words, negative attitude communications will be more discernible than the corresponding set of positive attitude communications.

From these findings, it is assumed that the facial modality is independent of verbal expressions, whereas the intonation quality of the verbal channel is dependent upon the spoken message.

Birdwhistle (1956) defines kinesics as the systematic study of visually sensible aspects of nonverbal interpersonal communication. Birdwhistle (1952) earlier had divided kinesics into three overlapping categories:

1. Pre-kinescis deals with the spontaneous and physical aspects of body motion.
2. Micro-kinesics studies the least particles of isolatable body-motion into manageable morphological classes.
3. Social kinesics is concerned with how these phenomenon relate to the communication functions of social interaction.

Implicit in these categories is that all human movements communicate meaning.

Though most research referred to in this review reflects Birdwhistle's social kinesics concept, the micro-kinesics aspect makes clear that the most minute and subtle lift of the eyebrow will convey additional information and thus through micro-kinesics we might determine some of the more subtle inner feelings.

One of the earliest researchers to investigate nonverbal characteristics was Darwin (1955:366). He asserted that future research must be directed to the area of human emotional expression.

> We have seen that expression in itself, or the language of the emotions, as it has been called, is certainly of importance for the welfare of mankind. To understand, as far as possible, the source or origin of the various expressions which may be

hourly seen on the faces of men around us ought to possess much interest for us.

The preceding review of literature on nonverbal behavior points to the process by which nonverbal behavior affects the learning processes and the social climate of the classroom. Teachers often observe their students' nonverbal behavior as clues to the classroom interest levels, the students' receptivity to the teacher-oriented instructional processes, and the ease or difficulty with which students are assimilating the instruction.

It is important that teachers be aware of how the students are perceiving the teacher's nonverbal behavior. Galloway (1970:6) suggests that student feedback is one of the most enlightening and sometimes disconcerting ways in which a teacher can check on students' perceptions.

Studies in Educable Mentally Retarded Students' Perceptions

Historically, the study of perception was based on recognition of emotions. Darwin's (1955) writings on the expressions and the recognition of emotions was a catalyst which stimulated a number of researchers, investigators, and writers to look closely at this phenomenon.

The writer made a search of the literature for studies on the perceptions of mentally retarded children. While there are many investigations on the neurophysiological processes of perception, there

has not been much research effort on the affective area of person perception.

The review of research on perception shows increasing effort and attention directed toward four important areas.

One area might be described as the interpersonal processes of perception. Allport (1937), Altrocchi (1959), Anderson (1965), Arnheim (1949), Boring and Titchener (1923), Bruner (1956), Bossom, J. and Maslow, A. H. (1957), Davitz (1964), and Tagiuri (1958) focused many of their investigations on personal perception, the ability to know others' qualities and emotions and how individuals judge the personal states and characteristics of others.

Another area of concern focuses upon social perception. Brown (1965), Bieri (1962), Bronfenbrenner, U. J. et al. (1958), and Gates (1923) related the impact of a culture on a person's perception. They addressed themselves to how these factors mold individual experience and behavior. A third area of the investigation of perception is directed across-cultures. The recognition of emotions, experiences, and characteristics assume different affectivity according to the implications of the culture. Klineberg (1940) pointed out that young Chinese girls are instructed not to show their unhappiness easily, do not smile easily, and do not let their teeth be seen when they smile. The overt expression of a feeling, an emotion, is dictated by the culture. This is not only true for the person expressing an emotion, but the person

who witnesses it. Even though studies show that cultural patterns affect perception and define its interpretation, we must still be cognizant that some studies have shown pan-cultural recognition (Allport and Pettigrew, 1957; Beattie, 1964; Campbell, 1964; Hallowell, 1942; Kluckhohn, 1954; and Morgan, 1959). Therefore, there appears to be both generality and locality in perceptual expressions across cultures.

The fourth arena of perceptual investigations has evolved around the perceptual qualities of body gestures, positioning, and facial expressions (Buxby, 1924; Boring, 1923; Coleman, 1949; Ekman, 1964; Frois-Wittman, 1930; Hanawalt, 1942; Landis, 1924; and Nummenman, 1964).

These positions could best be summarized by Ekman (1964: 295) who states:

> Research on body movement and facial expression has had to deal with a phenomenon of subjectivity which often confounds researchers. These culturally slanted behaviors can often be assessed within the cultural context and the findings are sometimes difficult to infer from one culture to another.

As mentioned before, this study's major focus is directed at how educable mentally retarded children perceive that part of their environment represented by their teachers' nonverbal behavior.

Although many developmental aspects affect perception, this study is directed toward the psychological functioning of EMR perceptions.

Allen and Jones (1967:52) view three psychological areas in the perceptual process:

(1) Perceptual: processes by which the child receives, organizes, and responds to stimuli.
(2) Conceptual: dealing with perceived data from concrete elements to highest order of abstraction.
(3) Psycholinguistic: classificatory response or enunciating a principle.

The problem areas which have been examined above may summarize human perception as the quality of perceiving and being perceived. As Smith (1966:111) states:

> Perceiving is the process by which a person connects up his past experiences and tendencies with the requirements and adjustive activity in a situation; it is a purposefully weighing and ordering which varies with the referential background of the individual.

Kephart (1963) points out that the "normally" developing child develops a readiness and awareness of his environment. With perceptual ability ready, he integrates, analyzes, and classifies perceived information, and then orders it into words, signs, or some type of communicative symbol for expression.

Luria and Yodavich (1959) indicate that there is disconnectedness between the perceptual and the expressional processes among mental retardates. Luria (1959) concludes that if changes are to be made in the feeling states of mentally retarded, the transformation requires slow and repetitive focus on perceptual learning.

Armstrong (1961:141) describes the physiological process of

perception by stating:

> Before we can perceive anything, a chain of processes must begin in the object, travel through our sense organs, and reach the brain. Until these complex processes occur, perception cannot occur.

Frostig (1963) found through her experiences in working with children enrolled at an "educational therapy" school for children with learning difficulties that disturbances in the child's visual and auditory perceptual systems contributed to low scores on achievement and intelligence measures. She stated "the children performed as if they were retarded."

Some researchers have attempted to isolate the origins of retardation. Research has pointed out that there is no single cause for mental retardation or retarded perceptual development.

Sarason (1959) points out that we cannot reasonably expect to overhaul or alter the entire educational system to fit the limitations of marginal students (EMR). It is desirable to isolate those conditions which are detrimental to the development of perceptual skills and establish corrective or preventative measures.

Stenquist's (1953), Kunner's (1949), and Davis's (1948) research have isolated areas which influence not only the mentally handicapped student's perceptions, but the perceptual effectiveness of all persons. These are listed as socioeconomic and social class factors, ethnic differences, language handicaps and bilingualism,

rural-urban differences, sex differences, and cultural and subcultural factors.

In order for perception to exist between two or more human organisms, it is necessary that there be a commonality of background and experiences. There must be a shared similarity of meaning of the referent . . . the stimulus. Tajfel (1969:317) reinforces this proposition by emphasizing that the individual perceives his environment in terms of his own experiences, interests, and understandings and any stimulus condition which is atypical (foreign) or different (distorted) from his perceptual set may cause a discrepancy in the information giving and receiving system.

Cultural influences plus the individual differences among persons are major factors which cause subjective interpretations of members from the same and different cultures. Cultural influences, according to Hirst (1965), provide much input on the perceptual qualities of the members of the culture. It should also be recognized that each member of a culture, or subculture, is a unique and subjective individual. These individuals have personal concerns, values, conflicts, attitudes, and prejudices. They form favorable and unfavorable opinions about a variety of phenomena.

Much of the current literature points to cultural conditions as a cause for slow adjustment and adaptability of children to their environment. Janke's (1945) study shows that a disproportionate number

of identified educable mentally retarded have backgrounds of lower socioeconomic cultural status. He summarizes that children from lower origins do not have the awarenesses and skills to attain higher scores on culturally biased psychometric instruments nor to conceptualize on middle status values. They can only relate back in the manner in which they perceived their environment. Glidewell (et al.) (1966:224) points out:

> Each child enters a classroom with certain personal attributes already developed. For the purposes of convenience, these can be classified as physical, intellectual, emotional, and social attributes. These attributes are interpreted in terms of how the child perceives his environment according to his preconditioned values and attitudes.

EMR children may have some or all of the following characteristics which will affect their perception of the environment. According to Cross (1970:2) these characteristics are:

--a slow learning rate
--an unrealistic self-concept
--poor retention
--shortened attention span
--problems in perceptual discrimination (auditory and visual)
--lowered frustration tolerance.

Sengstock (1962:44) directed his comments at perceptual qualities in the mentally retarded:

> The retarded face many problems similar to those that are faced by physically handicapped children; however, children with physical handicaps evoke sympathy and at least attempts on the part of society to understand their problems. The child who is mentally retarded has a non-visible handicap and is merely thought of as being an inferior human being. Children who are treated as though they are inferior soon

> accept this treatment as a fact and look upon themselves as being unworthy individuals.

Allport (1937:27) in his experimental work on individual consistencies in perceptual styles states:

> Personality is not seen as a determinant in perceptual responses by virtue of conditions common to social or cultural group, but rather in terms of individual differences superimposed on a common social background.

Davis (1948) found that a child's social perceptual dimension is a better predictor of success in his interpersonal relationships than any other factor.

Sengstock (1962:57) later addressed his thoughts in the form of a challenge to the role of the school:

> To counteract the negative views that the child has of himself and help him to hold values and behave in such a way that the general image he has of society is positive rather than negative . . .

Cogan (1958) carries this concept further by implying that how a child views his classroom environment (teachers' behavior, for example) has an important influence upon the child. The teacher perceives the student's behavior, and adjusts his own behavior which, in turn modifies the student's behavior.

Sengstock (1962:49) summarizes his remarks by stating:

> If as educators we can see the relationship between perceptions, self-concept, and behavior, learning, adjustment and intelligence, certainly we should also see that we have a responsibility to our students to develop favorable self-concepts in them. It is therefore important for the school program to place a heavy reliance on providing the experiences within

> the school setting for developing perceptual skills which will help the retardate gain self-respect and obtain the understanding and respect of others. The teacher's attitude, the climate in the classroom, and all activities must be conducive to creating an atmosphere which allows the mentally retarded to gain skills in living successfully with others.

Rogers (1961:158) reflects that learning will be facilitated if a teacher is consistent and congruent. This involves the teacher not only being what he is, but knowing who he is. He must be aware of the attitudes that he holds. The teacher should be aware of his needs in relation to the prescribed needs of his students.

EMR student feelings, attitudes, and values are affected by the rapport established between student and teacher. Student perceptions, according to Proshansky and Murphy (1942), are of considerable consequence to the teacher. Implicit in their study is that teachers must be cognizant of what students say and every thing they do. Teachers must be aware of how important the slightest gesture might be in influencing the child.

Galloway (1970) asserts that implications from the personal perceptual processes are important in establishing positive student-teacher relationships. Teachers must not only have skills in perceiving others but also develop a perceptual understanding of themselves . . . a realistic self-concept.

Assessments of Perceptions

In a search for and the subsequent review of literature relating to the measurement of EMR perceptions through visual and/or audio systems, the researcher found sparse effort in this direction.

Preceding investigations concerned with empirically testing and validating the person-perceptions of expressed bodily emotions have, at times, used audio-visual media. Darwin (1955) studied earlier man through paintings and sculpture. Allport and Vernon (1933) and Landis (1929) studied emotions through photographs; Birdwhistle (1952) systematically studied the most minute gestures (kines) of human interaction through motion films.

Levy, Orr, and Rosenweig's (1960) investigation showed still photographs of persons' facial expressions to groups of subjects, college students and mental retardates. The subjects were to interpret the expressions with implications of emotions expressed by the photographs. They found that there was no direct correlation between intelligence and the ability to identify correctly the expressions of photographs.

Moss (1927) may have laid the foundation for a conclusion to the Levy et al. study. Moss stated that sensitivity toward facial expression and aural intonations is related to social intelligence.

Zaidel and Mehrabian's (1967) investigation showed that female encoders were better able to communicate facial attitudes than male encoders.

In order to focus more closely on the Galloway Nonverbal Categories of behavior it is important that we look at the definitions and descriptions as defined and ordered by the author (1970:11) in his continuum.

1. Enthusiastic Support. Enthusiastic approval, unusual warmth, emotional support, or strong encouragement. A smile or nod to show enjoyment, pleasure, or satisfaction. A pat on the back, a warm greeting of praise, or any act that shows obvious approval. Vocal intonation or inflection of approval and support.

2. Helping. A spontaneous reaction to meet a pupil's request, help a pupil, or answer a need. A nurturant act. A look of acceptance and understanding of a problem, implying "I understand," or "I know what you mean," and followed up by appropriate action. An action intended to help. A tender, compassionate, or supportive voice. Or a laugh, a vocalization that breaks the tension.

3. Receptivity. Willingness to listen with patience and interest to pupil talk. By paying attention to the pupil, the teacher shows interest, implying that "lines of communication are open." He maintains eye contact, indicates patience and attention, suggests a readiness to listen or an attempt at trying to understand. A pose or stance of alertness, readiness, or willingness to have pupils talk. A gesture that indicates the pupil is on the "right track." A gesture that openly or subtly encourages the pupil to continue. The teacher augments pupil talk or encourages the pupil to continue: "Yes, yes" (um-hm), "Go on," "Okay," "All right," or "I'm listening." Such a vocalization supplements and encourages the pupil to continue.

4. Pro Forma. A matter of form or for the sake of form. Whether a facial expression, action, or vocal language, it neither encourages nor inhibits communication. A routine act in which the teacher does not need to listen or to respond.

5. Inattentive. Unwillingness or inability to be attentive. Disinterest or impatience with pupil talk. Avoidance of

eye contact. Apparent disinterest, unwillingness to listen. Slouchy or unalert posture. "Don't care attitude," the ignoring of pupil talk. Stance indicating internal tension, preoccupation, or concern with own thoughts. A hand gesture to block or terminate pupil talk. Impatience, or "I want you to stop talking."

6. Unresponsive. Failure to respond when a response would ordinarily be expected. Eogcentric behavior, openly, ignoring need, insensitive to feeling. An obvious denial of pupil feelings, noncompliance. Threatens, cajoles, condescends. Withdrawing from a request or expressed need of a pupil. Disaffection or unacceptance of feeling. A gesture suggesting tension or nervousness. Obvious interruption and interference.

7. Disapproval. Strong disapproval, negative overtones, disparagement, or strong dissatisfaction. Frowning, scowling, threatening glances. Derisive, sarcastic, or disdainful expression that "sneers at" or condemsn. Physical attack or aggressiveness--a blow, slap, or pinch. A pointed finger that pokes fun, belittles, or threatens pupils. Vocal tone that is hostile, cross, irritated, or antagonistic. Utterance suggesting unacceptance, disappointment, depreciation, or discouragement.

The recording of the seven categories of teachers' nonverbal behavior (Galloway, 1970) on videotape presents a series of ongoing classroom incidents. The subjects are presented in videotape with a classroom situation with meaningful referents. The videotape presents not only visual imagery but an auditory component. The content of the videotape will hereafter be referred to as the Visual Person-Perception Test.

Many studies discerning expressions and gestures utilized static and arrested stimuli. The effectiveness of utilizing a dynamic over a static stimulus is presented by a summary of studies by Bruner

and Tagiuri (1969:638):

> All in all, one wonders about the significance of "facial expression of emotions" in isolation. From the point of view of the adaptiveness of social behavior, it is rare to the vanishing point that judgment ever takes place on the basis of a face caught in a state similar to that provided by a photograph snapped at 20 milliseconds.

Thompson and Meltzer (1964:129) state that prior studies have shown small concern about the communicator, the expressor, the actor of emotion as a source of variance in the recognition of emotion.

> By freezing the contribution of the expressor of the emotional communication into a static photograph or drawing, the net result has been to focus attention upon the judge of the emotion rather than upon the expressor.

Many recent studies in this area have used television systems to record and subsequently study nonverbal behavior in structured and unstructured situations. Many studies, using this medium, have been concerned with analyzing nonverbal behavior in a theraputic situation (Ekman, 1964; Wachtel, 1967).

Tyler (1968) related the effectiveness of the television medium as a form for communicating messages:

> The use planned for the television medium includes the recording of problem/solution situations acted out before the camera to point out real life behaviors in the classroom. The role playing situations have already proved their value in both staff and youth development programs. Also, this medium has been used frequently for various research and experimental uses as an important tool by virtue of its impact through actual involvement. Television, a universally accepted powerful communication medium augments the benefits of role playing and presents a low key, yet highly effective way of passing ideas from ont group to another. Clearly the

> underlying reason for the effectiveness in these applications results from television's capability to convey not only the written word, but also the verbal and nonverbal forms of communication. In addition to the value of a televised recording of role playing in transferring ideas, television provides the viewer with the opportunity to be critical, through direct observation, in his own interpretation of the incident.

Heger (1968:1) states:

> The advent of the video recorder has opened new dimensions in the analysis of classroom events. At last teachers and educational researchers have an economical means to preserve and reproduce the communication and behavior events of the classroom. The potential of this new instrument is partially manifest by the growing variety of research and teacher preparation projects which incorporate video recording.

Summary

There is emerging evidence that nonverbal behavior has much impact on the communicative systems of man. Nonverbal communication does not consist of discrete forms of gestures, bodily positions, paralanguage, movements, etc., but rather represents an integral part of our message sending and receiving system.

The extent to which educable mentally retarded adolescents perceive the signals, clues, and cueing signs of others . . . especially teachers . . . is the focus of this study.

The research effort and investigations defining and evaluating the person-perceptual qualities of EMR youth, are meager. Even so, the few studies located and referenced revealed that EMR adolescents' perceptions are limited and underdeveloped.

It was not the purpose of this review of literature to approach a method of replicating past efforts but to add a dimension of research effort directed toward assessing the impact of lifelike, dynamic, and ongoing nonverbal messages which are directed at the affective qualities . . . the feeling states of EMR youngsters.

CHAPTER III

PROCEDURES

Before the collection of data began, the researcher had to prepare a general design of the experiment. The manner in which subjects were to be selected and grouped and the sequence of the non-verbal categorical incidents for the experimental instrument had to be specified. The design had to be constructed so that the resulting data would provide for a valid analysis of the different factors under consideration. The factors or variables considered in this study are:

a. sex of subject

b. age of subjects

c. subject's I. Q. score

d. subject's reading score (comprehension)

e. Test of Social Inference score of each subject

f. race of subject

g. socio-economic background of subject

The research design was constructed to consider how each of these variables would correlate to each of the seven incidents of the Galloway Continuum.

This study is concerned with visually interpreting the Galloway

Continuum for defining discrete categories of nonverbal behavior. This categorical system rates teacher's nonverbal behavior from encouraging (positive) to proforma (neutral) to inhibiting (negative).

Designing of the Experimental Instrument

The seven categories of the Galloway Nonverbal Behavioral Continuum were dramatized and visually recorded on Memorex 1/2" videotape. The video equipment used for taping consisted of:

1 3600 Sony video tape recorder

3 Sony AVC - 3200 Cameras with camera monitors

1 Javalin VC 100 camera with camera monitor

1 Sony Special Effects Generator - 1

2 Conrac 9" monitors

2 Sony 11" monitors

1 Sony 9" monitor

2 Conrac 19" monitors

2 omnidirectional microphones

1 Shore Mike Mixer

1 Sony EV 320 F 1" VTR (used for editing only)

Each of the categories became a separate taped incident. These incidents ranged in length from twenty to fifty-seven seconds.

The participants in the dramatized incidents were four female graduate students playing the roles of teachers, and five teenage boy

and girl actors representing the students in the taped episodes. The teenagers were recruited from the Columbus, Ohio Junior Theater of the Arts. These youth were chosen for their ability and skill in verbal and nonverbal presentations.

The incidents were videotaped at the A/V Media Television Studio in Columbus, Ohio. The studio was furnished to represent a classroom. On the classroom set was a student table, chairs, a teacher's desk and chair, and standard instructional regalia such as charts, books, tablets, pencils, and other associated artifacts.

A script and story board (Appendix A) was prepared by Charles M. Galloway and the researcher. These were given to the teacher-actors and student-actors several weeks before the taping session. Each teacher-actor and student-actor was assigned a specific role and function.

Present at the taping session were a sound and video engineer, two cameramen, a floor director, four teacher-actors, and five student-actors. Charles M. Galloway and the researcher directed the incidents.

Two of the teacher-actors were white . . . the other two were black. All but one of the student-actors (mean age 13. 5) were white. One was black.

Each teacher-actor was represented in all of the seven categories. This required four recordings of each category. The five

student-actors appeared in all twenty-eight incidents.

Planned Sequencing of Incidents

The seven incidents were written on small cards and were drawn from a box. There were fourteen cards with each of the seven incidents labeled "white" or "black." As each card was drawn, it was listed in numerical sequence. For instance, the first card drawn was receptivity, "black." The second card was enthusiastic support, "black." This card was placed back in the box and other cards were subsequently drawn until an unlike incident with "white" was drawn. This process was continued until each separate incident was selected with an alternating "white" or "black" teacher-actor.

Incidents one through seven were drawn with the alternating "white" and "black" teacher-actors. Incidents eight through fourteen were reversals of one through seven. This then became tape "A." Tape "B" was the same order as tape "A" except for the reversal of "black" and "white." The sequences are listed in Chapter IV, Table 5.

The rationale for the planned sequencing was each tape would be presented to 50 per cent of the subjects, thereby providing the necessary degree of freedom between the white teacher-actors and the black teacher-actors.

Eight considerations were implemented in the production of the videotaped incidents (Visual Person-Perception Test). These were:

1. As mentioned above, all seven incidents were acted out by

all four female teacher-actors. These incidents were sequentially ordered for each of the two tapes.

2. EMR subjects viewed either tape "A" or "B" and each tape included seven incidents acted out by a "white" teacher-actor and another seven incidents acted out by a "black" teacher-actor. A total of fourteen incidents.
3. Within each school and within each grade within each school, approximately half the total subjects viewed tape "A" and the other half, tape "B".
4. All five of the student-actors were the same in all twenty-eight incidents.
5. The teacher-actors were all female graduate students enrolled in the department of education, The Ohio State University. They were all youthful in appearance and were physiologically similar.
6. The video taped presentation (Visual Person-Perception Test) utilized natural classroom sounds, student talk, and movement. The teacher-actors did not verbalize in any incident but acted, reacted, and interacted in terms of postures, gestures, facial movements, and the use of the physical space.
7. The nonverbal communicative behaviors of the four teacher-actors, for each incident, were as identical as possible.

8. The Visual Person-Perception Test was validated by professional educators employed by the Ohio Department of Education, Division of Special Education (Table 1).

Validation of the Person-Perception Test

The objective of this validation process was to establish some level of validity in terms of the scenes representing the various categories of the Galloway Continuum.

The categorical sequences were validated by educational consultants employed by the Ohio Department of Education, Division of Special Education. All consultants had teaching experience (mean 8. 5 years). All had some teaching experience with educable mentally retarded children. All but one had a master's degree (Table 1).

The sequence viewed by the judges were the first seven incidents of tape "A." No attempt was made to correlate the judges' ratings with those of the subjects' since the rationales were different.

It was the intent of this study to determine if EMR students on a junior high level differentiated the teacher-actors' nonverbal behavioral qualities and the judges were to determine if each category represented what it was intended to represent.

There were seventeen (17) judges and seven (7) scenes. For each scene there were five possible ratings (Appendix F). Table 2 ranks these incidents in order of the Galloway Continuum . . . from

enthusiastic support to dissapproval. The judges viewed the first seven incidents of tape "A," the same tape "A" which half of the subjects viewed and rated.

The researcher reordered Table 2 for clarity of meaning and readability.

TABLE 1

JUDGES' IDENTIFYING DATA

	Judge's Name	Yrs. Exper.	Academic Level
1.	William Hartwig	15	M. A. +15
2.	George Fichter	9	M. A.
3.	Patrick Gibbons	21	B. S. +20
4.	James Schimmoller	6	M. A.
5.	Joseph Fisher	8	M. A.
6.	Thomas Fisher	4	M. A.
7.	Joseph Todd	3	M. A.
8.	Nicholas Gallo	10	M. A. +50
9.	Frank New	12	M. A. +10
10.	Twila Johnson	6	M. A.
11.	Jack Stowers	11	M. A.
12.	Geraldine Parham	12	M. A. +13
13.	Jack Cross	18	M. A.
14.	Barbara Blake	5	M. A.
15.	Frank Gross	6	M. A.
16.	Victor Naples	7	M. A.
17.	Richard Humphrey	4	M. A.
	Mean	8. 5	

In analyzing the judges' responses, there is no significant deviation from the judges' ratings to what the incidents were intended to visually describe. The greatest exception to this was the fifty category, inattentive. The experiental mean (total of the judges' scores per

incident divided by the number of judges) placed well within the 50 per cent deviation range of the inattentive category. The judges' scores were compared to the theoretical mean. The theoretical mean was established by arbitrarily assigning a rating of 1.00 to disapproval and adding two-thirds of a point to each succeeding incident. This established a rationale numerical correlation between the three-point subjects' rating scale (Appendix D) and the five-point scale by which the judges rated and validated the seven incidents (Appendix F).

According to the judges' ratings, all scenes represented those behavioral categories which they were designed to typify.

It should also be noted again that the incidents were designed and directed by Charles M. Galloway and the researcher which could have added to the validity of the experimental instrument.

TABLE 2

COMPARISON OF THE JUDGES' EXPERIMENTAL MEAN TO THE THEORETICAL MEAN

Incidents	Total Judges' Responses	Exper. Mean	Theoretical Mean	Diff.
Enthusiastic support	82	4.82	5.00	-.18
Helping	74	4.35	4.33	.02
Receptivity	66	3.90	3.66	.24
Proforma	50	2.94	3.00	-.06
Inattentive	34	2.00	2.33	-.33
Unresponsive	25	1.47	1.66	-.19
Disapproval	18	1.06	1.00	.06

Testing for Reliability

In order to determine the reliability of the Visual Person-Perception Test, selected subjects were presented the taped incidents after a lapse of four months. The first testing situation was during the week of March 27, 1972 and the re-test was on July 20, 1972.

The re-test sample consisted of eleven subjects who had viewed tape "A" and nine subjects who saw tape "B." The subjects were re-tested with the same tape they originally rated.

The following are lists of constraints inherent in the re-testing situation.

1. The subjects were taken from a different contextual situation. The subjects were removed from an academic class during the original testing. For the re-test they were taken from a job orientation program held in a recreation center.
2. The smallness of the re-test group did not provide sufficient numbers to obtain the balancing effect as in the original testing situation.
3. The professional (school psychologist) who administered the re-test was not the same person (also a school psychologist) who gave the original test.

These three limitations caused a difference in the placement of specific subjects in particular groups. Therefore, the original

testing groups could not be closely duplicated for the re-test. The data from the second testing had to consist of the subjects' responses to individual scenes.

The comparison of differences of subjects' responses were tested for each incident in both tape A and B by the method of paired difference. That is, the mean scores of the original testing and the re-test were compared scene by scene and tape by tape.

This method of comparing the initial and subsequent testing was selected because it eliminates sources of variance existing from pair to pair and, as mentioned above, the original groupings were not possible to duplicate for the second administration of the Visual Person-Perception Test.

The T method compares the calculated values of the differences in the subjects' scores, between the initial and subsequent test, with a table value. This is to determine if the differences are significant or not from a zero value. The closer to zero value, the less the significant difference.

The Average Difference column shows the difference from the initial test mean scores to those of the subsequent test. For instance, Scene 1, tape B indicates a minus difference. That is, the nine subjects who were retested on tape B rated enthusiastic support almost one mean value higher (-0. 999) than on the initial test.

TABLE 3

COMPARISON OF SUBJECTS' SCORES FOR THE VISUAL PERSON-PERCEPTION TEST: ORIGINAL AND RE-TEST

		Tape A		Tape B	
Variable		T Value	Average Diff.	T Value	Average Diff.
Enthusiastic Support	S	1.832	-0.454*	2.994	-0.999
Helping	S	1.268	-0.544	1.997	-0.666
Receptivity	S	1.377	-0.454	0.694	-0.222
Proforma	S	0.568	0.090	1.148	-0.333
Inattentive	S	1.435	-0.272	0.427	-0.111
Unresponsive	S	2.020	-0.727	0.000	0.000
Disapproval	S	1.228	-0.454	0.358	-0.111
Enthusiastic Support	D	0.932	-0.363	0.555	-0.111
Helping	D	1.173	-0.363	0.000	0.000
Receptivity	D	0.454	0.181	0.000	0.000
Proforma	D	0.879	-0.272	0.358	0.111
Inattentive	D	1.466	-0.454	0.709	-0.333
Unresponsive	D	0.790	-0.181	1.491	-0.222
Disapproval	D	1.731	-0.363	1.000	-0.333

*(-) indicates subjects scored dependent variable higher on the re-test than on the original test

Table 3 indicates that all dependent variables, with the exception of the first incident on tape B, showed no importance differences between the subjects' responses from the original testing to the re-testing on the experimental instrument.

Experimental Variables

The Gilmore Oral Reading Test, the Test of Social Inference, and the experimental instrument were administered by a female

psychologist on temporary leave from the Mansfield City School district. This psychologist had a master's degree and is certified as a school psychologist by the Ohio Department of Education.

The Gilmore Oral Reading Test, Test of Social Inference, and the experimental instrument were administered to all eighty-four subjects from Monday through Friday during the morning sessions (8:30 A. M. to 11:15 A. M.) during the last three weeks in March, 1972. The experimental instrument was administered in groups of four to five. The Gilmore Oral Reading and Test of Social Inference were administered individually. All tests administered by the tester were administered in a quiet, secluded room away from the mainstream of the school's activities.

Variables to be Related to the Experimental Factors

a. Subjects' race (black or white)

b. Subjects' age

c. Subjects' sex

d. Subjects' I. Q. scores

e. Subjects' reading comprehension score

f. Subjects'Test of Social Inference score

The I. Q. tests (Stanford-Binet) were all administered within the past year-and-a-half prior to this study. Subjects' ages and I. Q. scores were provided from the students' cumulative records by the Mansfield City School District.

The subjects of this experiment were eighty-four (84) EMR (educable mentally retarded) junior high school students who attended junior high school in the Mansfield City School District, Mansfield, Ohio. The rationale for the selection of this school district was to provide for wide applicability to other geographical areas.

Mansfield has sufficient population to be classified as an urban center (over 50,000 total population) and is surrounded and influenced by a vast rural area.

The Gilmore Oral Reading Test

The Gilmore Oral Reading Test was selected for its ease of administration and for its reliability in testing for a reading comprehension grade level. This test was not diagnostic but gave a fairly accurate assessment of the subjects' reading level.

The Gilmore Oral Reading Test, Form D and the Test of Social Inference (Edmondson, 1971), were both administered to the subjects two weeks prior to the administration of the experimentally designed instrument.

Test of Social Inference

The Test of Social Inference is an individually administered instrument designed to assess the social inferences and awarenesses of retarded adolescents. A short form of The Test of Social Inference was used in this study. It consists of fourteen (14) 8 x 10 inch pictur

items (Appendix B). The subjects were asked to interpret certain appropriate actions and contextual clues and make judgments. The quality of the judgmental responses determined the subject's score (T. S. I., Subject Rating Sheet, Appendix C).

Socio-economic Levels of Subjects

This study classified subjects as lower or middle status based on the U. S. Bureau of Census Report for Mansfield, Ohio, 1970. The median family income, median property valuation, per cent of employment level, and the per cent of housing units rated in sound condition were the criteria utilized in the socio-economic classification. In a few instances, other factors were considered; i. e , father's and/or mother's profession, parental educational level, job responsibilities, and other differentiating information located on the Subject's Identification (Data) Sheet (Appendix D).

All data collected on each subject came from one or a combination of two or three sources. These sources were:

1. Subjects' school records
2. U. S. Bureau of Census Report for Mansfield, Ohio, 1970
3. Testing initiated through this study.

Procedures for the Experimentation

All three junior high schools in the Mansfield City School District have special classes for EMR students. They are Appleseed,

Sherman, and Simpson Junior High Schools. The research was conducted in all three schools and all EMR classes within the schools.

The building principal of each school made available a quiet space for administering tests.

Before administering the Visual Person-Perception Test, the researcher prescheduled the subjects into groups of five (with the exception of one group of four).

The following criteria was used for providing a balancing effect of the groupings. Each group included:

a. White and black EMR subjects

b. Male and female subjects

c. Lower and middle class status subject(s).

The student's rating sheets (Appendix D) were designed specifically for this study by Charles M. Galloway, the researcher and three consultants with the Ohio Department of Education, Division of Special Education. They were

1. Jacque Cross, Chief, EMR section
2. Geraldine Parham, consultant
3. Jack Stowers, consultant.

Administering the Experimental Instrument

The subjects were brought to the testing room by a school official. The subjects were seated around a large table on which a

videotape recorder and television monitor were placed.

The tester then distributed the Student Rating Scales to each subject. The tester then read, aloud, the first part of prepared instructions supplied her by the researcher (Appendix E).

The tester then switched on the videotape recorder and the subjects viewed the first incident. The tester switched off the videotape recorder at the completion of the first incident and completed reading the prepared instructions for this part of the experiment. The instructions seemed complete in that, after the presentation of the third incident, no questions were directed from any subject who participated in this study.

There were forty-two discrete statements (three statements per incident times the fourteen incidents) that required subjects' responses.

The researcher arbitrarily assigned values to each point on the Student Rating Scale. For instance, if a subject responded "yes" to a single statement, then three points were assigned. If the subject answered "no," then one point was awarded . . . "I am not sure" response resulted in two points. If a subject was highly favorable in his assessment of a nonverbal behavioral category, then his score would be nine (three responses at three points each). A subject who was completely rejecting of an incident would produce a low score of three. The

following exemplifies the significance of subjects' scoring:

a. 3, 4 = highly rejecting

b. 5, 6 = accepting

c. 7, 8, and 9 = favorable

The testing situation took approximately twenty minutes per group.

Tapes A and B were shown alternately to each succeeding group in each school (Chapter IV, Table 4).

The Visual Person-Perception Test was administered on a 3600 1/2" Sony VTR and viewed on a Sony 16" monitor.

After the administration of the Gilmore Oral Reading Test, The Test of Social Inference, and the Visual Person-Perception Test had been completed, scores and indexing variables from the individual students were coded and prepared for statistical analysis.

Analysis of Data

This study developed and applied an analysis of variance model (Appendix J). The rationales for the selection of the analysis of variance (ANOVA) model were:

a. The analysis of variance is a mathematical technique which tests the statistical significance of the differences between two or more groups.

b. The analysis of variance is also effective in partitioning

the variability within a single group of subjects.

c. If there should be any random error between or among groups, it can be statistically eliminated by an adjustment of the data. This could be done within the computer program.

This research was concerned with partitioning the several scores of subjects' within a single group and between groups so the ANOVA model was developed to meet the statistical needs of this design.

This ANOVA model presented a sum of mean squares of scores for each subject and measured these scores to each of the experimentally designed classroom incidents.

The sum of mean squares between groups divided by the sum of mean squares within a group provided an "F" value which was used to interpret statistical significance. The ANOVA model is located in Appendix J.

The second major technique employed was a regression coefficient method. This method was used to assess any statistical significance between the several variables: 1) subject's age; 2) subject's sex; 3) subject's I. Q. score; 4) subject's reading score; and 5) Test of Social Inference score. These variables were individually correlated with subjects' scores on each incident of the Visual Person-Perception Test.

The scores of each variable were placed on a scatter plot, i. e., reading scores vs. enthusiastic support. The subjects' scores for each variable was correlated with the subjects' scores for each incident and an imaginary regression line was fixed to determine any statistically significance between each variable and incident. The results of the analysis are presented in the following Chapter IV.

In all statistical testing, the values coterminuous to the .05 level of confidence were employed to establish whether the null hypothesis should be accepted or rejected.

Summary

In this chapter the basic design and procedures used in this study have been presented. The process used to develop, design, and implement the experimentation has been described. The factors or variables for consideration were defined and additional testing and data collection were explained. The cooperating school system and the sample have been described.

In order to assess EMR student perceptions of the teachers' nonverbal behaviors, an experimental instrument, the Visual Person-Perception Test, was developed. This test was administered to the subjects and an assessment made to measure the subjects' person-perceptions.

The variables were the subjects' ages, sex, I. Q., reading

comprehension and Test of Social Inference scores, race, and socio-economic backgrounds. These variables were correlated with each of the seven taped incidents. These taped incidents we shall refer to as dependent variables.

As stated earlier, an analysis of variance (ANOVA) model was designed to be used to paritition between group and within group effects,

CHAPTER IV

THE FINDINGS OF THE STUDY

This chapter will first restate the hypotheses of the study. The experimental design, including variables and the research design will follow. The analysis of variance model will be described and defined in detail.

The results of the analysis will be reflected by the following variables:

1. Subjects' age
2. Subjects' sex
3. Subjects' scores on Test of Social Inference
4. Subjects' scores on Comprehension Reading Test
5. Subjects' scores on I. Q. Test
6. Socio-economic status of subject
7. Subjects' race
8. Interaction of race and socio-economic factors

It was hypothesized in this study that junior high school EMR subjects would differentiate various qualities of the nonverbal behaviors of teachers. It was further postulated that certain socioeconomic and ethnic factors would affect the perceptions of the subjects.

Experimental Design

1. Variables and Factors.

The dependent variables to be considered are the students' responses to each of the seven discrete incidents.

The independent variables may be classified into two (2) types. They are:

(a) Subjects' race, socioeconomic status (SES), I.Q., age, sex, reading comprehension score (RC) and Test of Social Inference score (TSI) of the student, and

(b) The race of the teacher-actor.

Of secondary interest are variables inherent in the design which shall be referred to as "tape" effects. The "tape" effects are those actions and prescribed behaviors of the teacher-actors. These "tape" effects are indicative of subjects' responses toward the actions of the "taped" teacher-actors' nonverbal behavior. This term is also used to define subject response differences of the same incidents between tape A and B.

The "tape" effects will be described more fully under design.

2. Design.

There were three (3) schools with one to three grades each (see Table 4). Subjects from each grade in a school were divided into groups of four and five.

Each group of subjects was exposed to the fourteen taped

TABLE 4

GROUP[1] AND TAPE[2] IDENTIFICATION FOR NONVERBAL BEHAVIOR STUDY BY SCHOOL AND GRADE

		School					
		Appleseed		Sherman		Simpson	
		Tape		Tape		Tape	
		A	B	A	B	A	B
Grade	7	1	-	6, 8, 18[3]	5, 7	16, 17, 21[3]	-
	8	-	2	9, 10	11, 12, 19[3]	-	-
	9	3	4	14	13, 15, 20[3]		

[1] = Values in the body of the table refer to group identification numbers.

[2] = Tape version viewed by group is indicated by A or B under respective schools.

[3] = Group was excluded from analysis because of unbalance in design with respect to either sex, socio-economic status, or race.

incidents. It is noted that there were two discrete tapes. These tapes were labeled "A" and "B."

Tape A had fourteen scenes consisting of seven episodes, each played once by a black female teacher-actor and once by a white female teacher-actor. The episodes were arranged on the tape in a sequence designed to cancel out any ordering effects that might interfere with estimation of the effects of the actor's race.

Tape B is identical to Tape A except that different teacher-actors were used and the sequence of episodes was the reverse of Tape A, again guarding against any order effects which might interfere with subjects' estimation of the incident (see Table 5).

The groups were selected from the students in a grade within a school so as to provide some balance with regard to (1) black to white, (2) male to female, and (3) lower to middle SES classifications (see Table 6).

When the composition of a grade within a school did not allow for a balanced selection for all groups selected from that grade and school, substitutions of similar subjects were made from the final assigned group of that grade. For instance, if a white female seventh grade EMR subject was missing from group six, then a white, female seventh grade EMR subject was substituted from the final group that would view the tape, the final group being from the same school and the same grade. The remaining subjects' scores

TABLE 5

SEQUENCE AND DESIGNATION OF TEACHER-ACTOR'S RACE[1] FOR FILM SCENES VIEWED BY STUDENT GROUPS

	Tape	
Scene	A	B
Receptivity	B	W
Enthusiastic Support	W	B
Unresponsive	B	W
Pro Forma	W	B
Helping	B	W
Disapproval	W	B
Inattentive	B	W
Inattentive	W	B
Disapproval	B	W
Helping	W	B
Pro Forma	B	W
Unresponsive	W	B
Enthusiastic Support	B	W
Receptivity	W	B

[1]B = black teacher-actor and W = white teacher-actor.

TABLE 6

STUDENT COMPOSITION OF GROUPS BY RACE (BLACK AND WHITE), SOCIO-ECONOMIC STATUS (LOWER AND MIDDLE) AND SEX (MALE AND FEMALE)

	Black				White				Number per Group
	Lower		Middle		Lower		Middle		
	Male	Female	Male	Female	Male	Female	Male	Female	
1	X				X	X	X	X	5
2	X	X			X		X	X	5
3		X	X	X	X			X	5
4		X		X			X	XX	5
5	X	X			XX		X		5
6	X	X			X	X		X	5
7	X	X			X	X		X	5
8	X	XX				X	X		5
9			X			XX		XX	5
10	X			X	X	X		X	5
11	X	X			X	X	X		5
12	X	X		X	XX				5
13	XX			X		XX			5
14	X	X				XX	X		5
15	X				XX			X	4
16			X		XXX	X			5
17	XX			X	X	X			5
Sub-Total:	15	11	3	6	17	14	7	11	84
18	X				XX	XX			5
19					XXXX				4
20	X	X			XX	X			5
21	XX	XXX							5
Total:	19	15	3	6	25	17	7	11	103

from the final groups were not included in the study. Groups 18, 19, 20, and 21 were excluded from the design lest the race, sex, or SES factor be more confounded by the unbalanced group effect and thereby decrease the efficiency of the design.

The race of the teacher-actors was balanced since four different actors were used. Two were black and two white. Both tapes A and B involved the seven behavioral scenes, each portrayed by one black and one white teacher-actor. Thus, the subjects selected and assigned to particular groups saw all of the seven episodes performed by the same black and white teacher-actors.

It was assumed that by the nature of the testing situation, there would be considerable correlation between responses from students in the same group. This was observed by the tester to be the case and was also visible in the data. For this reason the groups were placed in basic "blocks," comparing average responses of various groups in the analysis for main effects of some of the variables.

3. Sum and Difference of Responses

The level of student response to the nonverbal stimulation together with the effects of the different variables and factors associated with the subject were of primary interest in the analysis.

This study hoped also to ascertain whether the race of the teacher-actor affected the level of subject response.

This study is concerned with two sets of scores for each subject. They are:

a. The sum of scores are the values that the subjects scored for the black teacher-actor plus the white teacher-actor. These sums were derived by adding the subjects' scores for the same incidents within a single taped sequence, either Tape A or Tape B. This presents the subjects' responses in terms of the behavior or the actions of the teacher-actors.

Table 7 incidates that subjects' sum of mean scores ranked the incidents (dependent variables) in sequential order with the most encouraging behavior, enthusiastic support, receiving the highest mean score (14.203). The subjects also rated the most inhibiting teacher behavior, disapproval, with the lowest mean score (8.191).

The theoretical maximum mean score for the most encouraging teacher's nonverbal behavior would be 18.000. That is, three statements on the student rating sheet times a maximum of three points for each statement times two incidents of enthusiastic support (3 x 3 x 2) on each tape.

The lowest theoretical mean score for the most inhibiting teacher nonverbal behavior, disapproval, would be 6.000. That is, the three statements with a minimum of one point for each statement times

TABLE 7

TOTAL SUBJECTS' MEAN SCORES TO ALL SEVEN INCIDENTS

Enthusiastic Support	14.2
Helping	14.0
Receptivity	13.5
Proforma	12.2
Inattentive	10.3
Unresponsive	8.4
Disapproval	8.1

two incidents in the taped sequence (3 x 1 x 2).

Table 7 points out that subjects ranked enthusiastic support 3.797 below the mean and disapproval 2.191 above the theoretical mean.

It can be concluded that subjects responded to the seven categories of the Galloway Nonverbal Continuum and did differentiate among the encouraging categories (enthusiastic support, helping, and receptivity), the neutral behavior (proforma), and inhibiting categories (inattentive, unresponsive, and disapproval).

A comparison of the judges' total ratings was made to a selected sampling of subjects' ratings of the seven nonverbal behavioral incidents.

The purpose for comparing the ratings between subjects and

judges was to ascertain any variability existing between the judges' and subjects' responses.

A comparison was done by graphically presenting subjects' raw scores to the total scoring per incident of the judges.

The judges' ratings indicated a rather well defined and continuous positive slope when plotted out.

According to the judges' responses, the seven incidents on the Visual Person-Perception Test represented the nonverbal categories of the Galloway Continuum (Table 2).

A comparison of subjects' ratings to the judges' ratings is graphically shown on Charts 1 through 16.

Each subject involved in this study was assigned a number by the experimenter (Appendix N). The scores for every fifth subject was used as a basis for comparing subjects' scores with those of the judges.

The raw score of a subject for each of the fourteen dependent variables (incidents) was listed beside the subject's number (Appendix N).

A subject's sum of raw scores for each of the seven incidents was computed. For instance, subject number five rated enthusiastic support by a black teacher with a nine (Appendix N). A rating of seven was the score given to the white teacher for the same incident. This total of sixteen was then plotted on Chart number 1 along with the subject's scoring for each of the other six dependent variables.

A line was then drawn comparing subject number five with the judges' total responses.

An inspection of Charts 1 through 16 indicates that the selected sample of subjects generally responded in the same direction (positive slope) as did the judges.

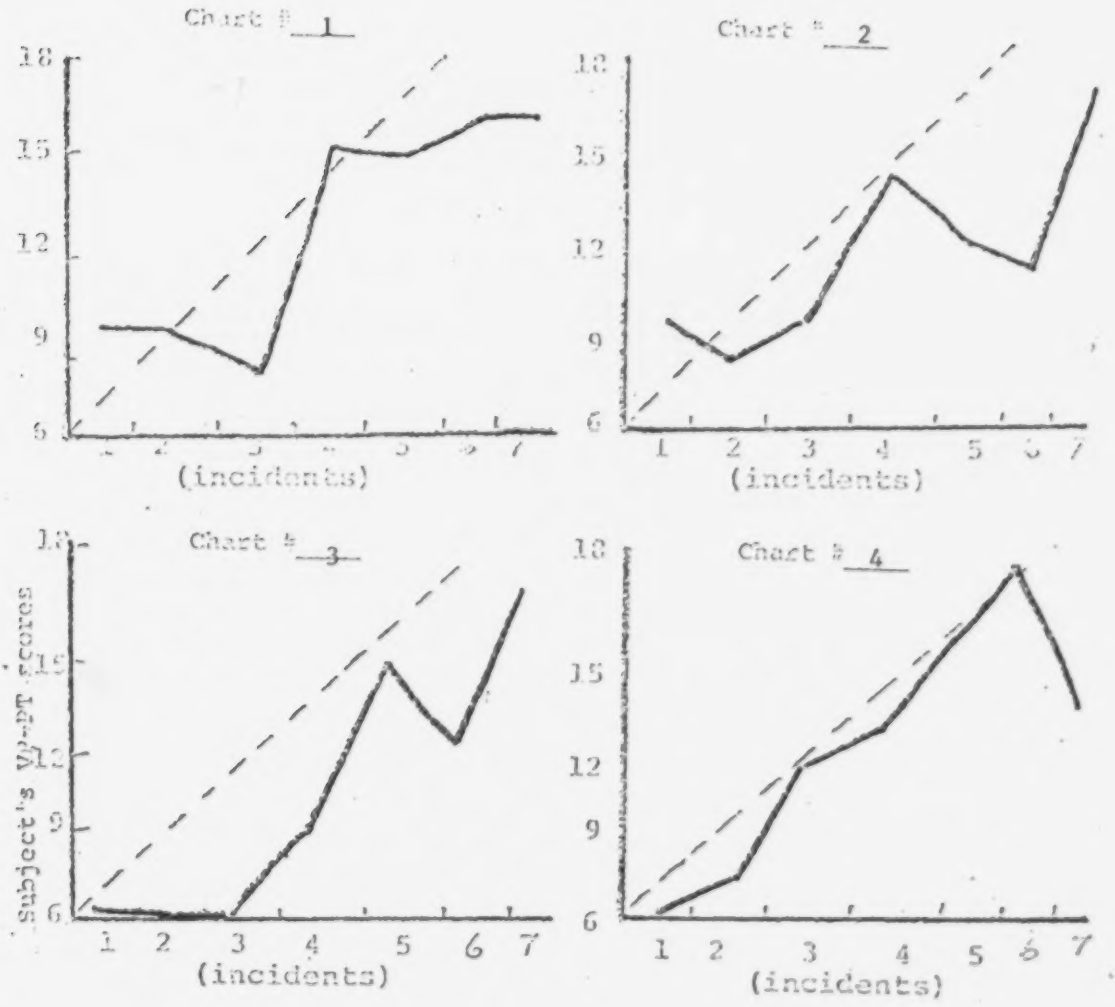
Below is a listing of the subjects' numbers and the Chart number which represents each subject.

Chart 1 = Subject 5	Chart 9 = Subject 45
Chart 2 = Subject 10	Chart 10 = Subject 50
Chart 3 = Subject 15	Chart 11 = Subject 55
Chart 4 = Subject 20	Chart 12 = Subject 60
Chart 5 = Subject 25	Chart 13 = Subject 65
Chart 6 = Subject 30	Chart 14 = Subject 70
Chart 7 = Subject 35	Chart 15 = Subject 75
Chart 8 = Subject 40	Chart 16 = Subject 80

b. The difference of scores: these are the differences of the subjects' scoring of the black teacher-actors minus the white teacher-actors as presented by similar incidents within a single taped sequence. This presents the students' responses in terms of the race of the teacher-actor. This, then becomes the basis of the analysis of this study.

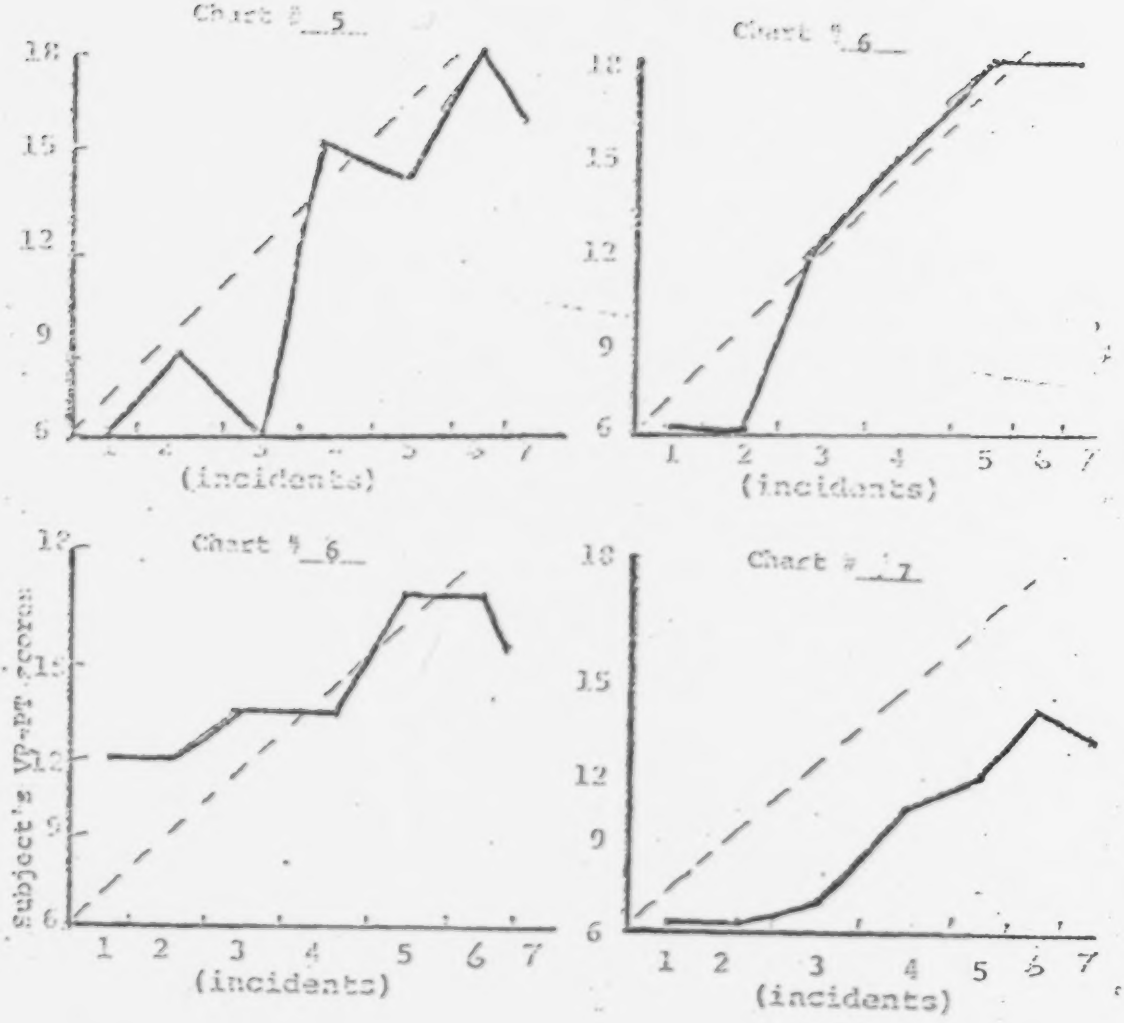
It was advantageous to perform the analysis in terms of derived scores which directly reflected these two aspects of the experiment.

Comparison of Subject's Responses for Each Incident to Those of the Judges



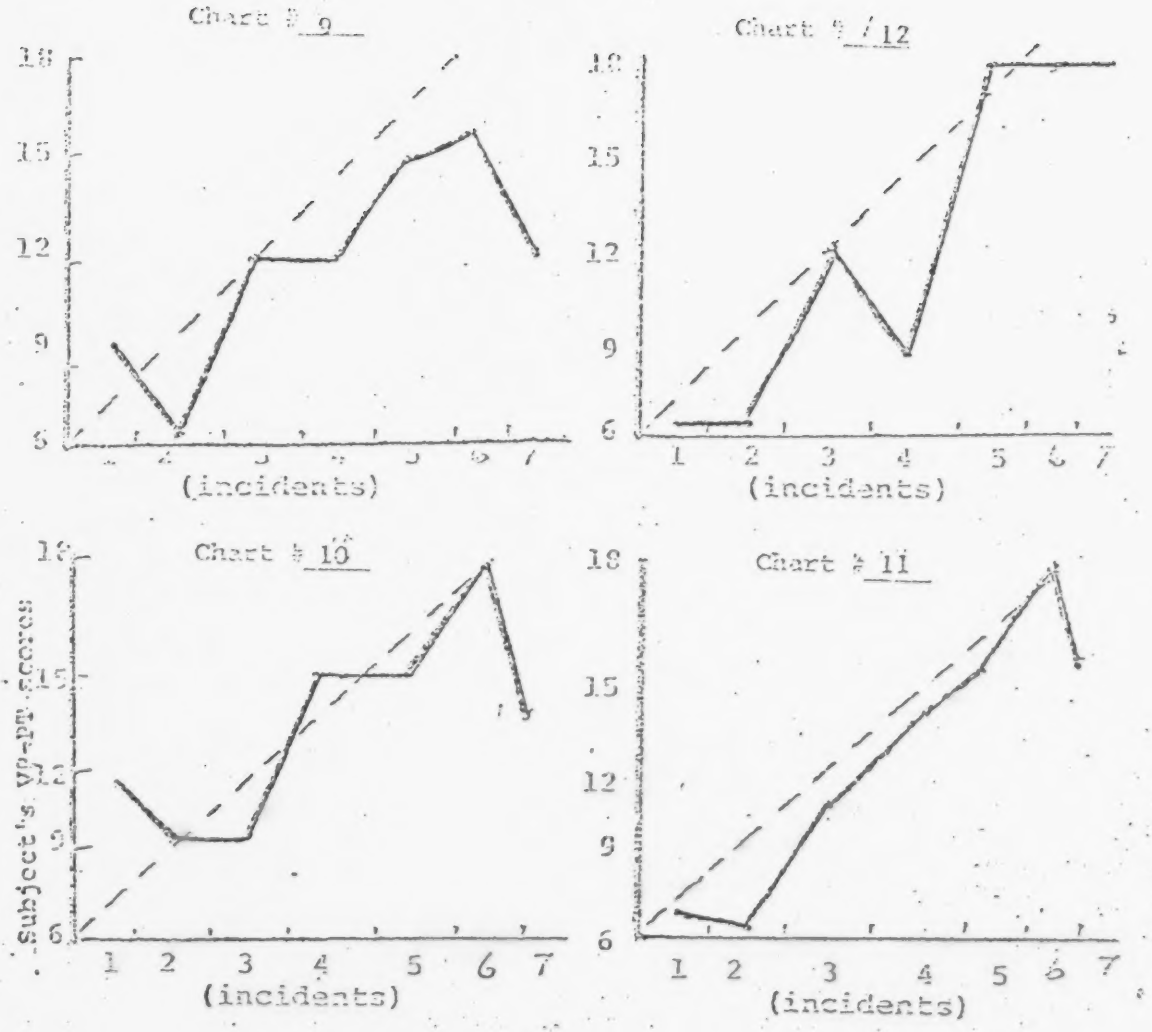
- - - - Judges ratings _____ Subject's ratings

Incidents: 1) disapproval 2) unresponsive
3) inattentive 4) proforma 5) receptivity
6) helping 7) enthusiastic support



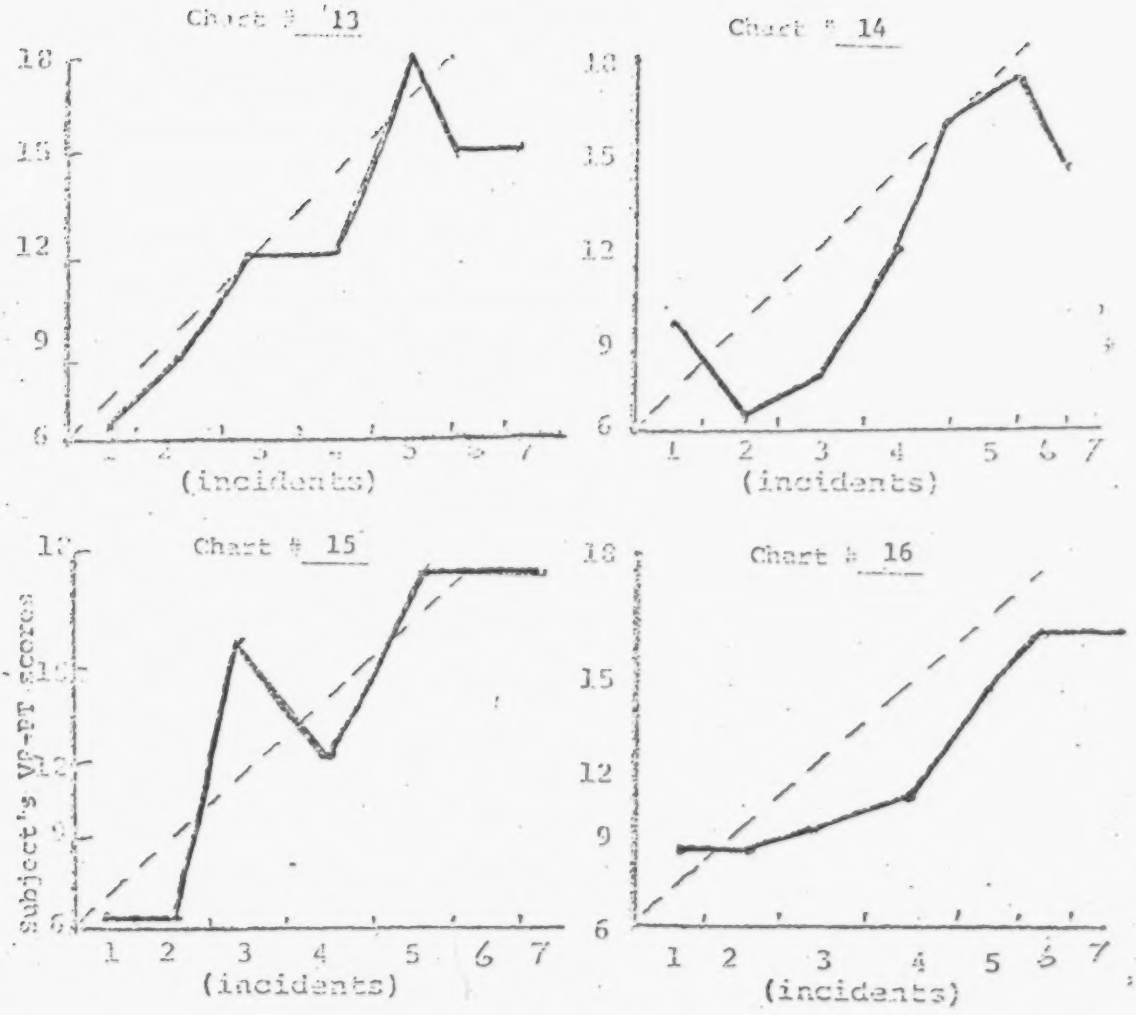
- - - - Judges ratings _____ Subject's ratings

Incidents: 1) disapproval 2) unresponsive
3) inattentive 4) proforma 5) receptivity
6) helping 7) enthusiastic support



- - - - Judges ratings _____ Subject's ratings

Incidents: 1) disapproval 2) unresponsive
3) inattentive 4) proforma 5) receptivity
6) helping 7) enthusiastic support



- - - - Judges ratings _____ Subject's ratings

Incidents: 1) disapproval 2) unresponsive
3) inattentive 4) proforma 5) receptivity
6) helping 7) enthusiastic support

Since each student gave a response twice for the same incident, once for the black actor and once again for the white actor, it was possible to take the sum and difference of these two responses as the derived scores of interest.

The sum of the two responses indicated the overall level of the student's response to the episode. The difference of the two responses directly reflects the effect of the teacher's race regardless of the level of the responses themselves.

The coding used in the analysis for the sum and difference scores of each scene is given in Table 8. An "S" following the descriptor incidates the sum of scores for particular scene, and the "D" refers to the difference of subjects' scores.

TABLE 8

CODING OF VIDEO TAPED SCENES FOR STUDENT SUM AND DIFFERENCE SCORES

Scene	Sum	Difference
Enthusiastic Support	ENTHSUP-S	ENTHSUP-D
Helping	HELP-S	HELP-D
Receptivity	RECPT-S	RECPT-D
Pro Forma	PROFOR-S	PROFOR-D
Inattentive	INATT-S	INATT-D
Unresponsive	UNRESP-S	UNRESP-D
Disapproval	DISAPP-S	DISAPP-D

Analysis

An analysis of variance model was used for each of the fourteen sum and difference scores described above. The independent factors were:

1) Race of the student (R)

2) Economic status of the student (E).

The covariates used in this study were:

1) Subjects' age

2) Subjects' sex

3) Subjects' reading comprehension score

4) Subjects' I. Q. score

5) Subjects' Test of Social Inference scores.

Each covariate was analyzed independently to each taped incident to determine any statistical significance. This was done by using a regression coefficient method.

The regression coefficient method assigns all of the subjects' responses to each covariate to a single taped incident. These subjects' responses formed a scatter plot (Appendix H). The slope of the line within each of the scatter plots determined the importance of the unadjusted covariate to each incident (dependent variable).

The slope may be positive or negative. For instance, if the slope of the line for subjects' T. S. I. scores to Receptivity-Sum runs from left to right, then the slope is considered positive. For instance,

an increase in the subjects' T. S. I. scores correlated with an increase in the subjects' affective responses toward the Receptivity-Sum. The subjects with higher T. S. I. scores responded more positively to the behavior of the white and black teachers-actors. A negative slope would indicate a decreasing correlation between subjects' T. S. I. scores and their responses to this type of teacher nonverbal behavior.

If the slope of the line was significantly different than zero, then the covariate was considered.

Those unadjusted covariates that received consideration from the regression coefficient method were I. Q., T. S. I., and reading comprehension.

The experimental design allowed these variables to be used as a covariate which provided for less complexity and with no loss in statistical effectiveness.

The following analysis of variance model was designed by the Educational Consultant System especially for this study.

$$y_{ij} = \mu + h_i + r_m + e_n + (re)_{mn} + (hr)_{jm} + (he)_{jm} + \alpha \sum_{=1}^{5} \gamma \alpha x^2_{ij} + \varepsilon_{ij}$$

The definitions for this model will be found in Appendix J.

An important function of this ANOVA model is that an individual subject's response to a particular incident is analyzed and this response can be compared to the average or overall responses of all

other subjects to that specific incident.

This ANOVA model also provides a comparison of a subject's or subjects' responses to all appropriate covariates (I. Q., Reading, T. S. I., age, and sex) and independent variables (race, socioeconomic status and combination of race by socioeconomic status) to each of the fourteen incidents (dependent variables).

The ANOVA model was programmed into the storage bank of the computer. Subjects' responses for the fourteen dependent variables were then analyzed, producing means and means squares (covariates and independent variables were also integrated in this analysis).

These values were then compared with the values in an F Table to determine statistical significance.

The analysis following this model (Appendix J) allows estimation and tests for each of the covariates and factors of the sum and difference scores.

The value of the mean, for a difference score is the overall difference of student response between the black and white acting teacher (i. e., the main effect for teacher race).

The regression coefficients are actually interaction effects on the unadjusted scores for each of the fourteen dependent variables (Table 8).

Results

1. Age and sex.

Preliminary analyses showed that age and sex had no visible effect on any of the fourteen sum and difference scores. These were excluded from subsequent analysis (Tables 12 and 13).

2. I. Q., T. S. I. and R C.

These independent variables (covariates) had some significant effect, when unadjusted for the other covariates.

A summary of Tables 9, 10, 11, 12, and 13 are given in Table 14. The "+" sign in the righthand column of Table 14 indicates the regression coefficient was positive, i. e., the covariate showed a positive correlation with the score.

It should be remembered that the difference scores were all "black" minus "white," thus, a positive correlation indicates that the student with higher covariate value tended to respond higher to the black teacher than to the white teacher. The "-" sign in the righthand column indicates a negative correlation and hence the reverse relationship.

An inspection of the scatter plots in Appendix H indicates that the correlations with T. S. I. may be mainly due to the one student with a high T. S. I. score (14) who also had high scores on the variables in question.

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subject's number	receptivity (black) 1	enthus. supp't. (white)	unresponsive (black)	pro forma (white)	helping (black)	disapproval (white)	inattentive (black)	inattentive (white)	disapproval (black)	helping (white)	pro forma (black)	unresponsive (white)	enthus. supp't. (black)	receptivity (white)
49	9	9	3	1	9	3	4	4	3	6	7	3	8	8
50	8	7	5	8	9	8	5	4	3	9	1	4	7	7
51	4	7	3	8	4	4	3	3	3	4	3	3	7	7
52	7	9	5	7	8	6	3	6	4	9	7	5	8	8
53	6	7	3	6	9	3	9	7	3	6	6	6	6	6
54	8	9	4	4	5	3	3	3	3	8	4	3	6	7
55	7	9	3	6	9	3	6	5	4	9	8	3	7	8
56	6	9	8	6	9	8	6	7	6	7	8	6	7	7
57	7	6	7	5	7	8	8	7	5	7	5	5	7	6
58	5	6	3	4	6	3	4	3	3	6	3	3	5	6
59	7	7	6	6	7	6	9	6	6	7	7	7	9	7
60	9	9	3	6	9	3	6	6	3	9	6	3	9	9

1 Indicates race of teacher-actor

subject's number	receptivity (black) 1	receptivity (white)	enthus. supp't. (white)	unresponsive (black)	pro forma (white)	helping (black)	disapproval (white)	inattentive (black)	inattentive (white)	disapproval (black)	helping (white)	pro forma (black)	unresponsive (white)	enthus. supp't (black)	receptivity (white)
61	9	9	3	9	7	3	7	6	3	9	9	5	8	8	
62	9	9	3	6	7	3	4	4	3	3	6	3	4	4	
63	8	8	3	4	8	3	4	4	4	8	5	3	7	8	
64	6	8	3	5	9	3	3	6	3	6	7	3	6	6	
65	9	9	6	6	9	3	6	6	3	6	6	3	6	9	
66	5	6	5	6	9	4	4	4	4	6	4	3	8	6	
67	5	6	3	3	6	3	3	4	3	3	6	3	5	8	
68	7	9	4	6	8	4	5	4	4	7	6	3	6	6	
69	7	5	3	4	9	3	8	7	3	7	4	3	9	7	
70	9	7	3	3	9	3	4	4	7	8	9	3	7	7	
71	9	9	3	9	5	3	3	9	5	3	9	7	7	7	
72	7	7	5	7	8	5	6	7	7	8	7	5	7	7	

1 Indicates race of teacher-actor

subject's number	receptivity (black) 1	enthus. supp't. (white)	unresponsive (black)	pro forma (white)	helping (black)	disapproval (white)	inattentive (black)	inattentive (white)	disapproval (black)	helping (white)	pro forma (black)	unresponsive (white)	enthus. supp't (black)	receptivity (white)
73	9	9	3	9	9	3	3	3	5	9	9	5	9	9
74	9	9	3	9	9	4	5	5	3	8	8	6	9	9
75	9	9	3	6	9	3	8	8	3	9	6	3	9	9
76	8	7	3	6	9	4	5	6	3	9	7	3	9	7
77	6	5	4	5	7	4	4	4	4	7	5	4	7	7
78	7	8	5	8	9	4	7	8	3	9	9	4	9	9
79	9	8	6	6	7	3	7	5	7	8	7	5	6	5
80	7	8	4	6	8	4	4	5	4	8	5	4	8	7
81	9	5	3	6	3	3	3	4	3	5	4	3	7	7
82	6	7	4	6	8	4	4	3	3	7	3	3	7	8
83	8	8	5	5	8	4	4	5	4	8	6	4	8	8
84	6	9	5	5	8	4	4	4	3	7	5	4	9	9

1 Indicates race of teacher-actor

APPENDIX O

COMMUNICATION ON TEST OF SOCIAL INFERENCE

THE OHIO STATE UNIVERSITY

The Nisonger Center
9 West Buttles Avenue
Columbus, Ohio 43215

January 24, 1972

Dr. Howard Ball
889 Kelton Avenue
Columbus, Ohio 43206

Dear Dr. Ball:

In reply to your telephone inquiry about the Test of Social Inference, we have sent you a copy of the revised edition of the report in which there is a description of this test in chapters 2 and 8. It was originally developed and used on some 1,000 cases. To date this test consists of 36 large photographs of quite varied types of social situations which are presented one at a time in individual sessions, accompanied by a structured inquiry. Subject's verbal responses, checked off on a recording form, receive credit when they match response criteria described in the scoring guide.

As indicated in the report, TSI scores have been found to correlate more closely with certain social adaptability criteria than intelligence test scores. It is also a matter of interest to us that the average TSI score of residents of several very good institutions for retarded persons were lower than the TSI scores of persons of similar age and IQ who were not institutionalized. We cannot at this time say whether this TSI score differential is the consequence of the kinds of behavioral turmoil that might precede institutional placement; whether it may result from institutional placement; or whether it indicates that TSI ability is truly crucial to being tolerated within one's home environment.

What I am trying to indicate is that the use of the test to date has been "promising". In some instances it has enabled us to find youngsters, in special education programs, because of their IQ scores, whose TSI performance indicates quite non-retarded

ability to make social inferences. Conversely, one sometimes finds youngsters with IQ's in the normal range with a social inferential deficit--suggestive of a need for some remedial training.

As Dr. Leland and I are both currently on the staff of the Nisonger Center and affiliated with the Psychology Department of O.S.U., we are very interested to see local use made of the instrument, and would do anything in our power to assist you. As I indicated, the test is not yet commercially available and we have a very few sets on hand ror on call from the University of Oregon. We could supply you one or possibly two of the 36-item sets within a week or ten days at $50.00 per set. We have to make these up by hand.

At the University of Oregon we have been experimenting with a shorter version of 27 items and with two shorter versions of 10 items each. The shortest formats reduce the time necessary for administration but would doubtless make the test less sensitive to improvement as a function of special training and would doubtless reduce correlations with some of the other instruments you plan to use. We could provide these shorter forms if you were interested in them.

Before you use the test we would like an opportunity to suggest some modifications to the training procedures in the test Manual. We would appreciate your contacting us to let us know more about your program and in what ways we can be of help.

Yours sincerely,

Barbara Edmonson

Barbara Edmonson, Ed.D.
Director of Psychology Training

BE/dk
cc: Henry Leland, Ph.D.

Our secretarial staff was bitten by the flu bug; hence this long delay!

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